DOCUMENTS EXPEDITING PROJECT

85th Congress
2d Session

COMMITTEE PRINT

REVIEW OF VOLUNTARY AGREEMENTS PROGRAM UNDER THE DEFENSE PRODUCTION ACT

EXPANSION OF MACHINE-TOOL INDUSTRY

REPORT DATED FEBRUARY 10, 1958

BY THE

ATTORNEY GENERAL

TO THE

COMMITTEE ON BANKING AND CURRENCY
UNITED STATES SENATE

FEBRUARY 19, 1958

Printed for the use of the Committee on Banking and Currency

UNITED STATES
GOVERNMENT PRINTING OFFICE
21742 WASHINGTON : 1958

COMMITTEE ON BANKING AND CURRENCY

J. W. FULBRIGHT, Arkansas, *Chairman*

A. WILLIS ROBERTSON, Virginia	HOMER E. CAPEHART, Indiana
JOHN J. SPARKMAN, Alabama	JOHN W. BRICKER, Ohio
J. ALLEN FREAR, Jr., Delaware	IRVING M. IVES, New York
PAUL H. DOUGLAS, Illinois	WALLACE F. BENNETT, Utah
A. S. MIKE MONRONEY, Oklahoma	PRESCOTT S. BUSH, Connecticut
JOSEPH S. CLARK, Pennsylvania	J. GLENN BEALL, Maryland
WILLIAM PROXMIRE, Wisconsin	FREDERICK G. PAYNE, Maine

Y. H. YINGLING, *Chief Clerk*
ROBERT A. WALLACE, *Staff Director*

CONTENTS

	Page
Statement of the chairman	V
Part 1—Defense expansion of the machine tool industry:	
I. The machine tool industry	1
A. Nature of machine tools	2
B. Description of the industry	3
C. Industry developments, 1938–50	5
II. Defense expansion for the Korean emergency	6
A. Ceiling prices, priority ratings and allocations	7
1. Ceiling prices	7
2. Priority ratings	7
3. Allocations	8
B. The Korean pool order program	8
C. Facilities expansion	10
D. Elephant tool program	12
E. Accelerated tax amortization	12
III. Current programs and problems	14
A. Current defense production act programs	15
1. M-day pool order program	15
2. Marine turbine and gear program	15
3. Stockpiling of elephant tools	16
B. Private use of Government-owned machine tools	16
IV. Competitive effects of defense expansion	17
A. Problems of analysis	17
B. Concentration in the industry	18
C. Concentration effects of expansion programs	20
Part 2—Voluntary agreements and programs under the Defense Production Act:	
A. Foreign petroleum supply agreement	21
B. Army integration committees	22
C. Contribution of tanker capacity agreement	23
D. USIA classified agreement	23
Appendix: Tables 1 through 27.	

CONTENTS

Page

Foreword of the chairman v

Part I – Defence preparation of the machine tool industry

1. The machine tool industry 1

A. Nature of the trade 2

B. Specialization in the industry 5

C. Industries developed via the 6

II. Defence preparation of the machine tool industry 9

A. Defence preparation in the 10

B. Defence preparation in the 12

C. Defence preparation in the 13

D. Defence preparation in the 14

E. Defence preparation in the 15

F. Defence preparation in the 16

G. Defence preparation in the 17

H. Defence preparation in the 18

I. Defence preparation in the 19

J. Defence preparation in the 20

K. Defence preparation in the 21

L. Defence preparation in the 22

M. Defence preparation in the 23

N. Defence preparation in the 24

O. Defence preparation in the 25

P. Defence preparation in the 26

Q. Defence preparation in the 27

R. Defence preparation in the 28

S. Defence preparation in the 29

T. Defence preparation in the 30

U. Defence preparation in the 31

V. Defence preparation in the 32

W. Defence preparation in the 33

X. Defence preparation in the 34

Y. Defence preparation in the 35

Z. Defence preparation in the 36

AA. Defence preparation in the 37

BB. Defence preparation in the 38

CC. Defence preparation in the 39

DD. Defence preparation in the 40

EE. Defence preparation in the 41

FF. Defence preparation in the 42

GG. Defence preparation in the 43

HH. Defence preparation in the 44

II. Defence preparation in the 45

JJ. Defence preparation in the 46

KK. Defence preparation in the 47

LL. Defence preparation in the 48

MM. Defence preparation in the 49

NN. Defence preparation in the 50

OO. Defence preparation in the 51

PP. Defence preparation in the 52

QQ. Defence preparation in the 53

RR. Defence preparation in the 54

SS. Defence preparation in the 55

TT. Defence preparation in the 56

UU. Defence preparation in the 57

VV. Defence preparation in the 58

WW. Defence preparation in the 59

XX. Defence preparation in the 60

YY. Defence preparation in the 61

ZZ. Defence preparation in the 62

AAA. Defence preparation in the 63

BBB. Defence preparation in the 64

CCC. Defence preparation in the 65

DDD. Defence preparation in the 66

EEE. Defence preparation in the 67

FFF. Defence preparation in the 68

GGG. Defence preparation in the 69

HHH. Defence preparation in the 70

III. Defence preparation in the 71

JJJ. Defence preparation in the 72

KKK. Defence preparation in the 73

LLL. Defence preparation in the 74

MMM. Defence preparation in the 75

NNN. Defence preparation in the 76

OOO. Defence preparation in the 77

PPP. Defence preparation in the 78

QQQ. Defence preparation in the 79

RRR. Defence preparation in the 80

SSS. Defence preparation in the 81

TTT. Defence preparation in the 82

UUU. Defence preparation in the 83

VVV. Defence preparation in the 84

WWW. Defence preparation in the 85

XXX. Defence preparation in the 86

YYY. Defence preparation in the 87

ZZZ. Defence preparation in the 88

AAAA. Defence preparation in the 89

BBBB. Defence preparation in the 90

CCCC. Defence preparation in the 91

DDDD. Defence preparation in the 92

EEEE. Defence preparation in the 93

FFFF. Defence preparation in the 94

GGGG. Defence preparation in the 95

HHHH. Defence preparation in the 96

IIII. Defence preparation in the 97

JJJJ. Defence preparation in the 98

KKKK. Defence preparation in the 99

LLLL. Defence preparation in the 100

MMMM. Defence preparation in the 101

NNNN. Defence preparation in the 102

OOOO. Defence preparation in the 103

PPPP. Defence preparation in the 104

QQQQ. Defence preparation in the 105

RRRR. Defence preparation in the 106

SSSS. Defence preparation in the 107

TTTT. Defence preparation in the 108

UUUU. Defence preparation in the 109

VVVV. Defence preparation in the 110

WWWW. Defence preparation in the 111

XXXX. Defence preparation in the 112

YYYY. Defence preparation in the 113

ZZZZ. Defence preparation in the 114

AAAAA. Defence preparation in the 115

BBBBB. Defence preparation in the 116

CCCCC. Defence preparation in the 117

DDDDD. Defence preparation in the 118

EEEEE. Defence preparation in the 119

FFFFF. Defence preparation in the 120

GGGGG. Defence preparation in the 121

HHHHH. Defence preparation in the 122

IIIII. Defence preparation in the 123

JJJJJ. Defence preparation in the 124

KKKKK. Defence preparation in the 125

LLLLL. Defence preparation in the 126

MMMMM. Defence preparation in the 127

NNNNN. Defence preparation in the 128

OOOOO. Defence preparation in the 129

PPPPP. Defence preparation in the 130

QQQQQ. Defence preparation in the 131

RRRRR. Defence preparation in the 132

SSSSS. Defence preparation in the 133

TTTTT. Defence preparation in the 134

UUUUU. Defence preparation in the 135

VVVVV. Defence preparation in the 136

WWWWW. Defence preparation in the 137

XXXXX. Defence preparation in the 138

YYYYY. Defence preparation in the 139

ZZZZZ. Defence preparation in the 140

AAAAAA. Defence preparation in the 141

BBBBBB. Defence preparation in the 142

CCCCCC. Defence preparation in the 143

DDDDDD. Defence preparation in the 144

EEEEEE. Defence preparation in the 145

FFFFFF. Defence preparation in the 146

GGGGGG. Defence preparation in the 147

HHHHHH. Defence preparation in the 148

IIIIII. Defence preparation in the 149

JJJJJJ. Defence preparation in the 150

KKKKKK. Defence preparation in the 151

LLLLLL. Defence preparation in the 152

MMMMMM. Defence preparation in the 153

NNNNNN. Defence preparation in the 154

OOOOOO. Defence preparation in the 155

PPPPPP. Defence preparation in the 156

QQQQQQ. Defence preparation in the 157

RRRRRR. Defence preparation in the 158

SSSSSS. Defence preparation in the 159

TTTTTT. Defence preparation in the 160

UUUUUU. Defence preparation in the 161

VVVVVV. Defence preparation in the 162

WWWWWW. Defence preparation in the 163

XXXXXX. Defence preparation in the 164

YYYYYY. Defence preparation in the 165

ZZZZZZ. Defence preparation in the 166

AAAAAAA. Defence preparation in the 167

BBBBBBB. Defence preparation in the 168

CCCCCCC. Defence preparation in the 169

DDDDDDD. Defence preparation in the 170

EEEEEEE. Defence preparation in the 171

FFFFFFF. Defence preparation in the 172

GGGGGGG. Defence preparation in the 173

HHHHHHH. Defence preparation in the 174

IIIIIII. Defence preparation in the 175

JJJJJJJ. Defence preparation in the 176

KKKKKKK. Defence preparation in the 177

LLLLLLL. Defence preparation in the 178

MMMMMMM. Defence preparation in the 179

NNNNNNN. Defence preparation in the 180

OOOOOOO. Defence preparation in the 181

PPPPPPP. Defence preparation in the 182

QQQQQQQ. Defence preparation in the 183

RRRRRRR. Defence preparation in the 184

SSSSSSS. Defence preparation in the 185

TTTTTTT. Defence preparation in the 186

UUUUUUU. Defence preparation in the 187

VVVVVVV. Defence preparation in the 188

WWWWWWW. Defence preparation in the 189

XXXXXXX. Defence preparation in the 190

YYYYYYY. Defence preparation in the 191

ZZZZZZZ. Defence preparation in the 192

AAAAAAAA. Defence preparation in the 193

BBBBBBBB. Defence preparation in the 194

CCCCCCCC. Defence preparation in the 195

DDDDDDDD. Defence preparation in the 196

EEEEEEEE. Defence preparation in the 197

FFFFFFFF. Defence preparation in the 198

GGGGGGGG. Defence preparation in the 199

HHHHHHHH. Defence preparation in the 200

IIIIIIII. Defence preparation in the 201

JJJJJJJJ. Defence preparation in the 202

KKKKKKKK. Defence preparation in the 203

LLLLLLLL. Defence preparation in the 204

MMMMMMMM. Defence preparation in the 205

NNNNNNNN. Defence preparation in the 206

OOOOOOOO. Defence preparation in the 207

PPPPPPPP. Defence preparation in the 208

QQQQQQQQ. Defence preparation in the 209

RRRRRRRR. Defence preparation in the 210

SSSSSSSS. Defence preparation in the 211

TTTTTTTT. Defence preparation in the 212

UUUUUUUU. Defence preparation in the 213

VVVVVVVV. Defence preparation in the 214

WWWWWWWW. Defence preparation in the 215

XXXXXXXX. Defence preparation in the 216

YYYYYYYY. Defence preparation in the 217

ZZZZZZZZ. Defence preparation in the 218

AAAAAAAAA. Defence preparation in the 219

BBBBBBBBB. Defence preparation in the 220

CCCCCCCCC. Defence preparation in the 221

DDDDDDDDD. Defence preparation in the 222

EEEEEEEEE. Defence preparation in the 223

FFFFFFFFF. Defence preparation in the 224

GGGGGGGGG. Defence preparation in the 225

HHHHHHHHH. Defence preparation in the 226

IIIIIIIII. Defence preparation in the 227

JJJJJJJJJ. Defence preparation in the 228

KKKKKKKKK. Defence preparation in the 229

LLLLLLLLL. Defence preparation in the 230

MMMMMMMMM. Defence preparation in the 231

NNNNNNNNN. Defence preparation in the 232

OOOOOOOOO. Defence preparation in the 233

PPPPPPPPP. Defence preparation in the 234

QQQQQQQQQ. Defence preparation in the 235

RRRRRRRRR. Defence preparation in the 236

SSSSSSSSS. Defence preparation in the 237

TTTTTTTTT. Defence preparation in the 238

UUUUUUUUU. Defence preparation in the 239

VVVVVVVVV. Defence preparation in the 240

WWWWWWWWW. Defence preparation in the 241

XXXXXXXXX. Defence preparation in the 242

YYYYYYYYY. Defence preparation in the 243

ZZZZZZZZZ. Defence preparation in the 244

AAAAAAAAAA. Defence preparation in the 245

BBBBBBBBBB. Defence preparation in the 246

CCCCCCCCCC. Defence preparation in the 247

DDDDDDDDDD. Defence preparation in the 248

EEEEEEEEEE. Defence preparation in the 249

FFFFFFFFFF. Defence preparation in the 250

GGGGGGGGGG. Defence preparation in the 251

HHHHHHHHHH. Defence preparation in the 252

IIIIIIIIII. Defence preparation in the 253

JJJJJJJJJJ. Defence preparation in the 254

KKKKKKKKKK. Defence preparation in the 255

LLLLLLLLLL. Defence preparation in the 256

MMMMMMMMMM. Defence preparation in the 257

NNNNNNNNNN. Defence preparation in the 258

OOOOOOOOOO. Defence preparation in the 259

PPPPPPPPPP. Defence preparation in the 260

QQQQQQQQQQ. Defence preparation in the 261

RRRRRRRRRR. Defence preparation in the 262

SSSSSSSSSS. Defence preparation in the 263

TTTTTTTTTT. Defence preparation in the 264

UUUUUUUUUU. Defence preparation in the 265

VVVVVVVVVV. Defence preparation in the 266

WWWWWWWWWW. Defence preparation in the 267

XXXXXXXXXX. Defence preparation in the 268

YYYYYYYYYY. Defence preparation in the 269

ZZZZZZZZZZ. Defence preparation in the 270

AAAAAAAAAAA. Defence preparation in the 271

BBBBBBBBBBB. Defence preparation in the 272

CCCCCCCCCCC. Defence preparation in the 273

DDDDDDDDDDD. Defence preparation in the 274

EEEEEEEEEEE. Defence preparation in the 275

FFFFFFFFFFF. Defence preparation in the 276

GGGGGGGGGGG. Defence preparation in the 277

HHHHHHHHHHH. Defence preparation in the 278

IIIIIIIIIII. Defence preparation in the 279

JJJJJJJJJJJ. Defence preparation in the 280

KKKKKKKKKKK. Defence preparation in the 281

LLLLLLLLLLL. Defence preparation in the 282

MMMMMMMMMMM. Defence preparation in the 283

NNNNNNNNNNN. Defence preparation in the 284

OOOOOOOOOOO. Defence preparation in the 285

PPPPPPPPPPP. Defence preparation in the 286

QQQQQQQQQQQ. Defence preparation in the 287

RRRRRRRRRRR. Defence preparation in the 288

SSSSSSSSSSS. Defence preparation in the 289

TTTTTTTTTTT. Defence preparation in the 290

UUUUUUUUUUU. Defence preparation in the 291

VVVVVVVVVVV. Defence preparation in the 292

WWWWWWWWWWW. Defence preparation in the 293

XXXXXXXXXXX. Defence preparation in the 294

YYYYYYYYYYY. Defence preparation in the 295

ZZZZZZZZZZZ. Defence preparation in the 296

AAAAAAAAAAAA. Defence preparation in the 297

BBBBBBBBBBBB. Defence preparation in the 298

CCCCCCCCCCCC. Defence preparation in the 299

DDDDDDDDDDDD. Defence preparation in the 300

EEEEEEEEEEEE. Defence preparation in the 301

FFFFFFFFFFFF. Defence preparation in the 302

GGGGGGGGGGGG. Defence preparation in the 303

HHHHHHHHHHHH. Defence preparation in the 304

IIIIIIIIIIII. Defence preparation in the 305

JJJJJJJJJJJJ. Defence preparation in the 306

KKKKKKKKKKKK. Defence preparation in the 307

LLLLLLLLLLLL. Defence preparation in the 308

MMMMMMMMMMMM. Defence preparation in the 309

NNNNNNNNNNNN. Defence preparation in the 310

OOOOOOOOOOOO. Defence preparation in the 311

PPPPPPPPPPPP. Defence preparation in the 312

QQQQQQQQQQQQ. Defence preparation in the 313

RRRRRRRRRRRR. Defence preparation in the 314

SSSSSSSSSSSS. Defence preparation in the 315

TTTTTTTTTTTT. Defence preparation in the 316

UUUUUUUUUUUU. Defence preparation in the 317

VVVVVVVVVVVV. Defence preparation in the 318

WWWWWWWWWWWW. Defence preparation in the 319

XXXXXXXXXXXX. Defence preparation in the 320

YYYYYYYYYYYY. Defence preparation in the 321

ZZZZZZZZZZZZ. Defence preparation in the 322

AAAAAAAAAAAAA. Defence preparation in the 323

BBBBBBBBBBBBB. Defence preparation in the 324

CCCCCCCCCCCCC. Defence preparation in the 325

DDDDDDDDDDDDD. Defence preparation in the 326

EEEEEEEEEEEEE. Defence preparation in the 327

FFFFFFFFFFFFF. Defence preparation in the 328

GGGGGGGGGGGGG. Defence preparation in the 329

HHHHHHHHHHHHH. Defence preparation in the 330

IIIIIIIIIIIII. Defence preparation in the 331

JJJJJJJJJJJJJ. Defence preparation in the 332

KKKKKKKKKKKKK. Defence preparation in the 333

LLLLLLLLLLLLL. Defence preparation in the 334

MMMMMMMMMMMMM. Defence preparation in the 335

NNNNNNNNNNNNN. Defence preparation in the 336

OOOOOOOOOOOOO. Defence preparation in the 337

PPPPPPPPPPPPP. Defence preparation in the 338

QQQQQQQQQQQQQ. Defence preparation in the 339

RRRRRRRRRRRRR. Defence preparation in the 340

SSSSSSSSSSSSS. Defence preparation in the 341

TTTTTTTTTTTTT. Defence preparation in the 342

UUUUUUUUUUUUU. Defence preparation in the 343

VVVVVVVVVVVVV. Defence preparation in the 344

WWWWWWWWWWWWW. Defence preparation in the 345

XXXXXXXXXXXXX. Defence preparation in the 346

YYYYYYYYYYYYY. Defence preparation in the 347

ZZZZZZZZZZZZZ. Defence preparation in the 348

AAAAAAAAAAAAAA. Defence preparation in the 349

BBBBBBBBBBBBBB. Defence preparation in the 350

CCCCCCCCCCCCCC. Defence preparation in the 351

DDDDDDDDDDDDDD. Defence preparation in the 352

EEEEEEEEEEEEEE. Defence preparation in the 353

FFFFFFFFFFFFFF. Defence preparation in the 354

GGGGGGGGGGGGGG. Defence preparation in the 355

HHHHHHHHHHHHHH. Defence preparation in the 356

IIIIIIIIIIIIII. Defence preparation in the 357

JJJJJJJJJJJJJJ. Defence preparation in the 358

KKKKKKKKKKKKKK. Defence preparation in the 359

LLLLLLLLLLLLLL. Defence preparation in the 360

MMMMMMMMMMMMMM. Defence preparation in the 361

NNNNNNNNNNNNNN. Defence preparation in the 362

OOOOOOOOOOOOOO. Defence preparation in the 363

PPPPPPPPPPPPPP. Defence preparation in the 364

QQQQQQQQQQQQQQ. Defence preparation in the 365

RRRRRRRRRRRRRR. Defence preparation in the 366

SSSSSSSSSSSSSS. Defence preparation in the 367

TTTTTTTTTTTTTT. Defence preparation in the 368

UUUUUUUUUUUUUU. Defence preparation in the 369

VVVVVVVVVVVVVV. Defence preparation in the 370

WWWWWWWWWWWWWW. Defence preparation in the 371

XXXXXXXXXXXXXX. Defence preparation in the 372

YYYYYYYYYYYYYY. Defence preparation in the 373

ZZZZZZZZZZZZZZ. Defence preparation in the 374

AAAAAAAAAAAAAAA. Defence preparation in the 375

BBBBBBBBBBBBBBB. Defence preparation in the 376

CCCCCCCCCCCCCCC. Defence preparation in the 377

DDDDDDDDDDDDDDD. Defence preparation in the 378

EEEEEEEEEEEEEEE. Defence preparation in the 379

FFFFFFFFFFFFFFF. Defence preparation in the 380

GGGGGGGGGGGGGGG. Defence preparation in the 381

HHHHHHHHHHHHHHH. Defence preparation in the 382

IIIIIIIIIIIIIII. Defence preparation in the 383

JJJJJJJJJJJJJJJ. Defence preparation in the 384

KKKKKKKKKKKKKKK. Defence preparation in the 385

LLLLLLLLLLLLLLL. Defence preparation in the 386

MMMMMMMMMMMMMMM. Defence preparation in the 387

NNNNNNNNNNNNNNN. Defence preparation in the 388

OOOOOOOOOOOOOOO. Defence preparation in the 389

PPPPPPPPPPPPPPP. Defence preparation in the 390

QQQQQQQQQQQQQQQ. Defence preparation in the 391

RRRRRRRRRRRRRRR. Defence preparation in the 392

SSSSSSSSSSSSSSS. Defence preparation in the 393

TTTTTTTTTTTTTTT. Defence preparation in the 394

UUUUUUUUUUUUUUU. Defence preparation in the 395

VVVVVVVVVVVVVVV. Defence preparation in the 396

WWWWWWWWWWWWWWW. Defence preparation in the 397

XXXXXXXXXXXXXXX. Defence preparation in the 398

YYYYYYYYYYYYYYY. Defence preparation in the 399

ZZZZZZZZZZZZZZZ. Defence preparation in the 400

AAAAAAAAAAAAAAAA. Defence preparation in the 401

BBBBBBBBBBBBBBBB. Defence preparation in the 402

CCCCCCCCCCCCCCCC. Defence preparation in the 403

DDDDDDDDDDDDDDDD. Defence preparation in the 404

EEEEEEEEEEEEEEEE. Defence preparation in the 405

FFFFFFFFFFFFFFFF. Defence preparation in the 406

GGGGGGGGGGGGGGGG. Defence preparation in the 407

HHHHHHHHHHHHHHHH. Defence preparation in the 408

IIIIIIIIIIIIIIII. Defence preparation in the 409

JJJJJJJJJJJJJJJJ. Defence preparation in the 410

KKKKKKKKKKKKKKKK. Defence preparation in the 411

LLLLLLLLLLLLLLLL. Defence preparation in the 412

MMMMMMMMMMMMMMMM. Defence preparation in the 413

NNNNNNNNNNNNNNNN. Defence preparation in the 414

OOOOOOOOOOOOOOOO. Defence preparation in the 415

PPPPPPPPPPPPPPPP. Defence preparation in the 416

QQQQQQQQQQQQQQQQ. Defence preparation in the 417

RRRRRRRRRRRRRRRR. Defence preparation in the 418

SSSSSSSSSSSSSSSS. Defence preparation in the 419

TTTTTTTTTTTTTTTT. Defence preparation in the 420

UUUUUUUUUUUUUUUU. Defence preparation in the 421

VVVVVVVVVVVVVVVV. Defence preparation in the 422

WWWWWWWWWWWWWWWW. Defence preparation in the 423

XXXXXXXXXXXXXXXX. Defence preparation in the 424

YYYYYYYYYYYYYYYY. Defence preparation in the 425

ZZZZZZZZZZZZZZZZ. Defence preparation in the 426

AAAAAAAAAAAAAAAAA. Defence preparation in the 427

BBBBBBBBBBBBBBBBB. Defence preparation in the 428

CCCCCCCCCCCCCCCCC. Defence preparation in the 429

DDDDDDDDDDDDDDDDD. Defence preparation in the 430

EEEEEEEEEEEEEEEEE. Defence preparation in the 431

FFFFFFFFFFFFFFFFF. Defence preparation in the 432

GGGGGGGGGGGGGGGGG. Defence preparation in the 433

HHHHHHHHHHHHHHHHH. Defence preparation in the 434

IIIIIIIIIIIIIIIII. Defence preparation in the 435

JJJJJJJJJJJJJJJJJ. Defence preparation in the 436

KKKKKKKKKKKKKKKKK. Defence preparation in the 437

LLLLLLLLLLLLLLLLL. Defence preparation in the 438

MMMMMMMMMMMMMMMMM. Defence preparation in the 439

NNNNNNNNNNNNNNNNN. Defence preparation in the 440

OOOOOOOOOOOOOOOOO. Defence preparation in the 441

PPPPPPPPPPPPPPPPP. Defence preparation in the 442

QQQQQQQQQQQQQQQQQ. Defence preparation in the 443

RRRRRRRRRRRRRRRRR. Defence preparation in the 444

SSSSSSSSSSSSSSSSS. Defence preparation in the 445

TTTTTTTTTTTTTTTTT. Defence preparation in the 446

UUUUUUUUUUUUUUUUU. Defence preparation in the 447

VVVVVVVVVVVVVVVVV. Defence preparation in the 448

WWWWWWWWWWWWWWWWW. Defence preparation in the 449

XXXXXXXXXXXXXXXXX. Defence preparation in the 450

YYYYYYYYYYYYYYYYY. Defence preparation in the 451

ZZZZZZZZZZZZZZZZZ. Defence preparation in the 452

AAAAAAAAAAAAAAAAAA. Defence preparation in the 453

BBBBBBBBBBBBBBBBBB. Defence preparation in the 454

CCCCCCCCCCCCCCCCCC. Defence preparation in the 455

DDDDDDDDDDDDDDDDDD. Defence preparation in the 456

EEEEEEEEEEEEEEEEEE. Defence preparation in the 457

FFFFFFFFFFFFFFFFFF. Defence preparation in the 458

GGGGGGGGGGGGGGGGGG. Defence preparation in the 459

HHHHHHHHHHHHHHHHHH. Defence preparation in the 460

IIIIIIIIIIIIIIIIII. Defence preparation in the 461

JJJJJJJJJJJJJJJJJJ. Defence preparation in the 462

KKKKKKKKKKKKKKKKKK. Defence preparation in the 463

LLLLLLLLLLLLLLLLLL. Defence preparation in the 464

MMMMMMMMMMMMMMMMMM. Defence preparation in the 465

NNNNNNNNNNNNNNNNNN. Defence preparation in the 466

OOOOOOOOOOOOOOOOOO. Defence preparation in the 467

PPPPPPPPPPPPPPPPPP. Defence preparation in the 468

QQQQQQQQQQQQQQQQQQ. Defence preparation in the 469

RRRRRRRRRRRRRRRRRR. Defence preparation in the 470

SSSSSSSSSSSSSSSSSS. Defence preparation in the 471

TTTTTTTTTTTTTTTTTT. Defence preparation in the 472

UUUUUUUUUUUUUUUUUU. Defence preparation in the 473

VVVVVVVVVVVVVVVVVV. Defence preparation in the 474

WWWWWWWWWWWWWWWWWW. Defence preparation in the 475

XXXXXXXXXXXXXXXXXX. Defence preparation in the 476

YYYYYYYYYYYYYYYYYY. Defence preparation in the 477

ZZZZZZZZZZZZZZZZZZ. Defence preparation in the 478

AAAAAAAAAAAAAAAAAAA. Defence preparation in the 479

BBBBBBBBBBBBBBBBBBB. Defence preparation in the 480

CCCCCCCCCCCCCCCCCCC. Defence preparation in the 481

DDDDDDDDDDDDDDDDDDD. Defence preparation in the 482

EEEEEEEEEEEEEEEEEEE. Defence preparation in the 483

FFFFFFFFFFFFFFFFFFF. Defence preparation in the 484

GGGGGGGGGGGGGGGGGGG. Defence preparation in the 485

HHHHHHHHHHHHHHHHHHH. Defence preparation in the 486

IIIIIIIIIIIIIIIIIII. Defence preparation in the 487

JJJJJJJJJJJJJJJJJJJ. Defence preparation in the 488

KKKKKKKKKKKKKKKKKKK. Defence preparation in the 489

LLLLLLLLLLLLLLLLLLL. Defence preparation in the 490

MMMMMMMMMMMMMMMMMMM. Defence preparation in the 491

NNNNNNNNNNNNNNNNNNN. Defence preparation in the 492

OOOOOOOOOOOOOOOOOOO. Defence preparation in the 493

PPPPPPPPPPPPPPPPPPP. Defence preparation in the 494

QQQQQQQQQQQQQQQQQQQ. Defence preparation in the 495

RRRRRRRRRRRRRRRRRRR. Defence preparation in the 496

SSSSSSSSSSSSSSSSSSS. Defence preparation in the 497

TTTTTTTTTTTTTTTTTTT. Defence preparation in the 498

UUUUUUUUUUUUUUUUUUU. Defence preparation in the 499

VVVVVVVVVVVVVVVVVVV. Defence preparation in the 500

WWWWWWWWWWWWWWWWWWW. Defence preparation in the 501

XXXXXXXXXXXXXXXXXXX. Defence preparation in the 502

YYYYYYYYYYYYYYYYYYY. Defence preparation in the 503

ZZZZZZZZZZZZZZZZZZZ. Defence preparation in the 504

AAAAAAAAAAAAAAAAAAAA. Defence preparation in the 505

BBBBBBBBBBBBBBBBBBBB. Defence preparation in the 506

CCCCCCCCCCCCCCCCCCCC. Defence preparation in the 507

DDDDDDDDDDDDDDDDDDDD. Defence preparation in the 508

EEEEEEEEEEEEEEEEEEEE. Defence preparation in the 509

FFFFFFFFFFFFFFFFFFFF. Defence preparation in the 510

GGGGGGGGGGGGGGGGGGGG. Defence preparation in the 511

HHHHHHHHHHHHHHHHHHHH. Defence preparation in the 512

IIIIIIIIIIIIIIIIIIII. Defence preparation in the 513

JJJJJJJJJJJJJJJJJJJJ. Defence preparation in the 514

KKKKKKKKKKKKKKKKKKKK. Defence preparation in the 515

LLLLLLLLLLLLLLLLLLLL. Defence preparation in the 516

MMMMMMMMMMMMMMMMMMMM. Defence preparation in the 517

NNNNNNNNNNNNNNNNNNNN. Defence preparation in the 518

OOOOOOOOOOOOOOOOOOOO. Defence preparation in the 519

PPPPPPPPPPPPPPPPPPPP. Defence preparation in the 520

QQQQQQQQQQQQQQQQQQQQ. Defence preparation in the 521

RRRRRRRRRRRRRRRRRRRR. Defence preparation in the 522

SSSSSSSSSSSSSSSSSSSS. Defence preparation in the 523

TTTTTTTTTTTTTTTTTTTT. Defence preparation in the 524

UUUUUUUUUUUUUUUUUUUU. Defence preparation in the 525

VVVVVVVVVVVVVVVVVVVV. Defence preparation in the 526

WWWWWWWWWWWWWWWWWWWW. Defence preparation in the 527

XXXXXXXXXXXXXXXXXXXX. Defence preparation in the 528

YYYYYYYYYYYYYYYYYYYY. Defence preparation in the 529

ZZZZZZZZZZZZZZZZZZZZ. Defence preparation in the 530

AAAAAAAAAAAAAAAAAAAAA. Defence preparation in the 531

BBBBBBBBBBBBBBBBBBBBB. Defence preparation in the 532

CCCCCCCCCCCCCCCCCCCCC. Defence preparation in the 533

DDDDDDDDDDDDDDDDDDDDD. Defence preparation in the 534

EEEEEEEEEEEEEEEEEEEEE. Defence preparation in the 535

FFFFFFFFFFFFFFFFFFFFF. Defence preparation in the 536

GGGGGGGGGGGGGGGGGGGGG. Defence preparation in the 537

HHHHHHHHHHHHHHHHHHHHH. Defence preparation in the 538

IIIIIIIIIIIIIIIIIIIII. Defence preparation in the 539

JJJJJJJJJJJJJJJJJJJJJ. Defence preparation in the 540

KKKKKKKKKKKKKKKKKKKKK. Defence preparation in the 541

LLLLLLLLLLLLLLLLLLLLL. Defence preparation in the 542

MMMMMMMMMMMMMMMMMMMMM. Defence preparation in the 543

NNNNNNNNNNNNNNNNNNNNN. Defence preparation in the 544

OOOOOOOOOOOOOOOOOOOOO. Defence preparation in the 545

PPPPPPPPPPPPPPPPPPPPP. Defence preparation in the 546

QQQQQQQQQQQQQQQQQQQQQ. Defence preparation in the 547

RRRRRRRRRRRRRRRRRRRRR. Defence preparation in the 548

SSSSSSSSSSSSSSSSSSSSS. Defence preparation in the 549

TTTTTTTTTTTTTTTTTTTTT. Defence preparation in the 550

UUUUUUUUUUUUUUUUUUUUU. Defence preparation in the 551

VVVVVVVVVVVVVVVVVVVVV. Defence preparation in the 552

WWWWWWWWWWWWWWWWWWWWW. Defence preparation in the 553

XXXXXXXXXXXXXXXXXXXXX. Defence preparation in the 554

YYYYYYYYYYYYYYYYYYYYY. Defence preparation in the 555

ZZZZZZZZZZZZZZZZZZZZZ. Defence preparation in the 556

AAAAAAAAAAAAAAAAAAAAAA. Defence preparation in the 557

BBBBBBBBBBBBBBBBBBBBBB. Defence preparation in the 558

CCCCCCCCCCCCCCCCCCCCCC. Defence preparation in the 559

DDDDDDDDDDDDDDDDDDDDDD. Defence preparation in the 560

EEEEEEEEEEEEEEEEEEEEEE. Defence preparation in the 561

FFFFFFFFFFFFFFFFFFFFFF. Defence preparation in the 562

GGGGGGGGGGGGGGGGGGGGGG. Defence preparation in the 563

HHHHHHHHHHHHHHHHHHHHHH. Defence preparation in the 564

IIIIIIIIIIIIIIIIIIIIII. Defence preparation in the 565

JJJJJJJJJJJJJJJJJJJJJJ. Defence preparation in the 566

KKKKKKKKKKKKKKKKKKKKKK. Defence preparation in the 567

LLLLLLLLLLLLLLLLLLLLLL. Defence preparation in the 568

MMMMMMMMMMMMMMMMMMMMMM. Defence preparation in the 569

NNNNNNNNNNNNNNNNNNNNNN. Defence preparation in the 570

OOOOOOOOOOOOOOOOOOOOOO. Defence preparation in the 571

PPPPPPPPPPPPPPPPPPPPPP. Defence preparation in the 572

QQQQQQQQQQQQQQQQQQQQQQ. Defence preparation in the 573

RRRRRRRRRRRRRRRRRRRRRR. Defence preparation in the 574

SSSSSSSSSSSSSSSSSSSSSS. Defence preparation in the 575

TTTTTTTTTTTTTTTTTTTTTT. Defence preparation in the 576

UUUUUUUUUUUUUUUUUUUUUU. Defence preparation in the 577

VVVVVVVVVVVVVVVVVVVVVV. Defence preparation in the 578

WWWWWWWWWWWWWWWWWWWWWW. Defence preparation in the 579

XXXXXXXXXXXXXXXXXXXXXX. Defence preparation in the 580

YYYYYYYYYYYYYYYYYYYYYY. Defence preparation in the 581

ZZZZZZZZZZZZZZZZZZZZZZ. Defence preparation in the 582

AAAAAAAAAAAAAAAAAAAAAAA. Defence preparation in the 583

BBBBBBBBBBBBBBBBBBBBBBB. Defence preparation in the 584

CCCCCCCCCCCCCCCCCCCCCCC. Defence preparation in the 585

DDDDDDDDDDDDDDDDDDDDDDD. Defence preparation in the 586

EEEEEEEEEEEEEEEEEEEEEEE. Defence preparation in the 587

FFFFFFFFFFFFFFFFFFFFFFF. Defence preparation in the 588

GGGGGGGGGGGGGGGGGGGGGGG. Defence preparation in the 589

HHHHHHHHHHHHHHHHHHHHHHH. Defence preparation in the 590

IIIIIIIIIIIIIIIIIIIIIII. Defence preparation in the 591

JJJJJJJJJJJJJJJJJJJJJJJ. Defence preparation in the 592

KKKKKKKKKKKKKKKKKKKKKKK. Defence preparation in the 593

LLLLLLLLLLLLLLLLLLLLLLL. Defence preparation in the 594

MMMMMMMMMMMMMMMMMMMMMMM. Defence preparation in the 595

NNNNNNNNNNNNNNNNNNNNNNN. Defence preparation in the 596

OOOOOOOOOOOOOOOOOOOOOOO. Defence preparation in the 597

PPPPPPPPPPPPPPPPPPPPPPP. Defence preparation in the 598

QQQQQQQQQQQQQQQQQQQQQQQ. Defence preparation in the 599

RRRRRRRRRRRRRRRRRRRRRRR. Defence preparation in the 600

SSSSSSSSSSSSSSSSSSSSSSS. Defence preparation in the 601

TTTTTTTTTTTTTTTTTTTTTTT. Defence preparation in the 602

UUUUUUUUUUUUUUUUUUUUUUU. Defence preparation in the 603

VVVVVVVVVVVVVVVVVVVVVVV. Defence preparation in the 604

WWWWWWWWWWWWWWWWWWWWWWW. Defence preparation in the 605

XXXXXXXXXXXXXXXXXXXXXXX. Defence preparation in the 606

YYYYYYYYYYYYYYYYYYYYYYY. Defence preparation in the 607

ZZZZZZZZZZZZZZZZZZZZZZZ. Defence preparation in the 608

AAAAAAAAAAAAAAAAAAAAAAAA. Defence preparation in the 609

BBBBBBBBBBBBBBBBBBBBBBBB. Defence preparation in the 610

CCCCCCCCCCCCCCCCCCCCCCCC. Defence preparation in the 611

DDDDDDDDDDDDDDDDDDDDDDDD. Defence preparation in the 612

EEEEEEEEEEEEEEEEEEEEEEEE. Defence preparation in the 613

FFFFFFFFFFFFFFFFFFFFFFFF. Defence preparation in the 614

GGGGGGGGGGGGGGGGGGGGGGGG. Defence preparation in the 615

HHHHHHHHHHHHHHHHHHHHHHHH. Defence preparation in the 616

IIIIIIIIIIIIIIIIIIIIIIII. Defence preparation in the 617

JJJJJJJJJJJJJJJJJJJJJJJJ. Defence preparation in the 618

KKKKKKKKKKKKKKKKKKKKKKKK. Defence preparation in the 619

LLLLLLLLLLLLLLLLLLLLLLLL. Defence preparation in the 620

MMMMMMMMMMMMMMMMMMMMMMMM. Defence preparation in the 621

NNNNNNNNNNNNNNNNNNNNNNNN. Defence preparation in the 622

OOOOOOOOOOOOOOOOOOOOOOOO. Defence preparation in the 623

PPPPPPPPPPPPPPPPPPPPPPPP. Defence preparation in the 624

QQQQQQQQQQQQQQQQQQQQQQQQ. Defence preparation in the 625

RRRRRRRRRRRRRRRRRRRRRRRR. Defence preparation in the 626

SSSSSSSSSSSSSSSSSSSSSSSS. Defence preparation in the 627

TTTTTTTTTTTTTTTTTTTTTTTT. Defence preparation in the 628

UUUUUUUUUUUUUUUUUUUUUUUU. Defence preparation in the 629

VVVVVVVVVVVVVVVVVVVVVVVV. Defence preparation in the 630

WWWWWWWWWWWWWWWWWWWWWWWW. Defence preparation in the 631

XXXXXXXXXXXXXXXXXXXXXXXX. Defence preparation in the 632

YYYYYYYYYYYYYYYYYYYYYYYY. Defence preparation in the 633

ZZZZZZZZZZZZZZZZZZZZZZZZ. Defence preparation in the 634

AAAAAAAAAAAAAAAAAAAAAAAAA. Defence preparation in the 635

BBBBBBBBBBBBBBBBBBBBBBBBB. Defence preparation in the 636

CCCCCCCCCCCCCCCCCCCCCCCCC. Defence preparation in the 637

DDDDDDDDDDDDDDDDDDDDDDDDD. Defence preparation in the 638

EEEEEEEEEEEEEEEEEEEEEEEEE. Defence preparation in the 639

FFFFFFFFFFFFFFFFFFFFFFFFF. Defence preparation in the 640

GGGGGGGGGGGGGGGGGGGGGGGGG. Defence preparation in the 641

HHHHHHHHHHHHHHHHHHHHHHHHH. Defence preparation in the 642

IIIIIIIIIIIIIIIIIIIIIIIII. Defence preparation in the 643

JJJJJJJJJJJJJJJJJJJJJJJJJ. Defence preparation in the 644

KKKKKKKKKKKKKKKKKKKKKKKKK. Defence preparation in the 645

LLLLLLLLLLLLLLLLLLLLLLLLL. Defence preparation in the 646

MMMMMMMMMMMMMMMMMMMMMMMMM. Defence preparation in the 647

NNNNNNNNNNNNNNNNNNNNNNNNN. Defence preparation in the

STATEMENT OF THE CHAIRMAN

Under section 708 (e) of the Defense Production Act of 1950, the Attorney General is directed to review the administration of that act. This review is for the purpose of determining any factors which may tend to eliminate competition, create or strengthen monopolies, injure small business, or otherwise promote undue concentration of economic power in the course of administration of the act.

The Defense Production Act Amendments of 1955 require the Attorney General to report under section 708 (e) of the act at least once every 3 months, and to include in these reports a statement on the continuing review, required of the Attorney General under the 1955 amendments, of the voluntary agreements approved under section 708 of the act.

Previous quarterly reports have been made available as committee prints, as follows:

February 28, 1956 (reports dated November 9, 1955; February 9, 1956, Tax Amortization Certificates in the Petroleum Industry; February 20, 1956);

August 10, 1956 (reports dated May 9, 1956; August 9, 1956, Tax Amortization Certificates in the Nitrogen Industry);

December 6, 1956 (report dated November 9, 1956, Government-Sponsored Industrial Research);

February 13, 1957 (report dated February 9, 1957, Stockpiling); May 20, 1957 (report dated May 9, 1957, The Titanium Metal Industry);

August 28, 1957 (reported dated August 9, 1957, The Nickel Industry);

November 19, 1957 (report dated November 8, 1957, Expansion of Tungsten Supply).

The Attorney General's report dated February 10, 1958, contains the results of a study of defense expansion of the machine-tool industry, and a review of recent activities in, and the current status of, the voluntary agreements approved by the Director of the Office of Defense Mobilization and the Attorney General under section 708 of the Defense Production Act.

This report is of interest to the committee and the Senate, and to the public.

J. W. FULBRIGHT, *Chairman.*

EXPANSION OF MACHINE-TOOL INDUSTRY

Report of the Attorney General Pursuant to Section 708 (e) of the Defense Production Act of 1950, as Amended

FEBRUARY 10, 1958.

To the President of the United States of America and the Senate and House of Representatives of the United States of America in Congress assembled:

I have the honor to submit a report in compliance with section 708 (e) of the Defense Production Act of 1950, as amended. That provision directs the Attorney General to make—

> * * * surveys for the purpose of determining any factors which may tend to eliminate competition, create or strengthen monopolies, injure small business, or otherwise promote undue concentration of economic power in the course of the administration of this Act. Such surveys, and the reports hereafter required, shall include studies of the voluntary agreements and programs authorized by this section. The Attorney General shall submit to the Congress and the President within 90 days after the approval of this Act, and at least once every three months, reports setting forth the results of such surveys and including such recommendations as he may deem desirable.

In compliance with this direction, this report, in two parts, (1) studies the effects of defense expansion of machine-tool supply upon the competitive status of the machine-tool industry, and (2) presents the current status of outstanding voluntary agreements and programs, which are under continuous review by this Department pursuant to section 708 (b) and (e) of the Defense Production Act.

PART 1—DEFENSE EXPANSION OF THE MACHINE-TOOL INDUSTRY

This part reports as to the competitive status of the machine-tool industry in relation to defense-expansion programs. It discusses first, the general nature of machine tools and the resulting complex structure of this industry.

Consideration is then given to the defense-expansion efforts in this industry, in the light of machine-tool needs at the outset of the Korean conflict. From those needs evolved various governmental activities, including price controls, priorities and allocations, and the pool order, facilities expansion and elephant tool programs. In addition, expansion of this industry involved a substantial number of rapid tax-amortization grants. All these programs are now concluded, and examination of their administration discloses no discrimination against any segment of the machine-tool industry. Current programs, aimed to meet revisions in mobilization planning necessitated by changes in weapons, are discussed as largely prospective in operation. Reference is also made to current problems relating to use of Government-owned machine tools.

Last, tentative analysis is made of the competitive status of the industry, both generally and with respect to particular categories of machine tools, within the limits imposed by information available for survey purposes. It is indicated that, although there may have been some increase in concentration, this does not appear to be attributable to the defense-expansion programs. However, the bulk of industry information gathered by other Government agencies is held confidential. There are statutory and administrative policies which restrict its availability to this Department for survey or enforcement purposes. Attention is drawn to the fact that this is a special problem of importance to this report's analysis and to the execution of antitrust policies in this and related fields.

I. THE MACHINE TOOL INDUSTRY

A. NATURE OF MACHINE TOOLS

Machine tools are indispensable to a modern industrial economy. Mass production of metal goods, whether automobiles or tanks, refrigerators or jets, stoves or missiles, is possible only with machine tools or equipment previously made on machine tools. Current industrial productivity reflects the constant improvement of these tools. In 1900, the most efficient machine tool available could cut 200 pounds of metal per hour at the maximum. By 1942, the rate exceeded 1,400 pounds an hour.[1] Today's tools are even more efficient, with greater power and durability, permitting greater speed and closer tolerance, and, frequently, embodying such advances as automation and electronic controls.

The term "machine tool" comprises two general types of nonportable, power machines for working metal: Those designed to cut metal,[2] and those designed to form and shape metal.[3] Within each of these general types, nine standard subclassifications have been adopted.[4] In each of these, additional detailed subclassifications have been made, differentiating the particular tools on factors of size, power, and capacity, as well as specialized modifications.[5]

The number of subcategories reflects the fact that machine tools of the same basic kind vary widely in size, cost, and adaptability. Certain tools are so specialized in design for a particular product that minor model change makes the tool obsolete. On the other hand, most of the general purpose machine tools are adaptable to many different applications, and their rate of obsolescence is correspondingly

[1] Hearings before a subcommittee of the Senate Select Committee on Small Business, Machine-Tool Programs, 84th Cong., 2d sess., 155 (1956).

[2] Cutting-type tools include lathes, planers, and boring, milling, broaching, and gear-cutting machines. Under the Standard Commodity Code classifications, used by Business and Defense Services Administration of the Department of Commerce, these cutting-type tools are given S. C. C. Nos. 3411 through 3419. See BDSA, Facts for Industry, Metalworking Machinery, series BDSAF-173 (1956). The Census Bureau employs the Standard Industrial Code (S. I. C.) in its statistical reporting in the census of manufactures, which includes under "machine tools, S. I. C. No. 3541," all cutting-type tools. However, the S. C. C. and S. I. C. classifications are not entirely comparable.

[3] Forming- and shaping-type tools include presses, forging machines, drophammers, and punching and shearing machines, Standard Commodity Code classifications Nos. 3441 through 3449. The S. I. C. classification used by Census, which roughly corresponds, is "metalworking machinery, No. 3542." The divergence between the classifications employed by the two agencies is especially wide for forming and shaping tools.

[4] Cutting type by S. C. C. numbers: Boring machines 3411; broaching machines 3412; drilling machines 3413; gear-cutting and finishing machines 3414; grinding machines 3415; lathes 3416; milling machines 3417; planers 3418; miscellaneous machine tools 3419. Forming and shaping type by S. C. C. numbers: bending and forming machines 3441; hydraulic and pneumatic presses 3442; mechanical-power driven presses 3443; manual presses 3444; punching and shearing machines 3445; forging machinery and hammers 3446; wire and metal-ribbon forming machines 3447; riveting machines 3448; miscellaneous secondary metal forming and cutting machines 3449.

[5] For a listing of these subclassifications, see Department of Defense, Directory of Metalworking Machinery (1956).

much less. To some degree, a producer may have a choice of alternative tools to perform a given operation.

This variety of subclassifications indicates that all tools in a category may not be wholly competitive with each other, and in some cases such competition may cut completely across category boundaries. However, within the limitations of statistical materials [6] and the time available for this survey, the general categories of machine tools provide a general but acceptable framework for measuring competition between producers of various kinds of tools.

On this basis, it is noted that the dollar volume of cutting-type tools is from 3 to 4 times that of forming and shaping tools. In the first 9 months of 1957, the total dollar value of shipments of cutting-type machine tools was about $639.8 million. Distribution of this business among the S. C. C. categories varied widely. Lathes, for example, accounted for 24.4 percent of these shipments, while milling machine tools had 16.8 percent. On the other hand, broaching machines and planers represented 2.4 and 1.1 percent, respectively.[7]

The dollar value of shipments of forming and shaping type machine tools approximated $259.4 million in the first 9 months of 1957. Of this volume, mechanical presses accounted for 44.9 percent and hydraulic presses, 29.4 percent, while all of the other categories had less than 10 percent each.[8]

B. DESCRIPTION OF THE INDUSTRY

The industry manufacturing machine tools presently includes some 367 companies located principally in New England and the East Central States.[9] Many of these companies are small and closely held. Some have less than 25 employees and produce less than $100,000 worth of tools annually. The industry also includes some large companies which have in excess of 2,500 employees, with shipments running into the tens of millions of dollars per year. The giant of the industry is the Cincinnati Milling Machine Co., with annual sales in excess of $100 million.[10] The "average" company in 1952 was one with an investment of $800,000 and a working force between 200 and 300.[11] As of a year later, it was said that a "typical" company in this industry would have annual sales of about $4 million.[12]

Of the total companies in the industry, there are 277 which are engaged in producing the cutting type machine tools, and 90 which are producing forming and shaping tools.[13] The machine tool builders

[6] For discussion of information problems, see sec. IV.

[7] Appendix, table 8.

[8] Appendix table 9.

[9] U. S. Department of Commerce, Bureau of the Census, Facts for Industry, Machine Tools (Series M35E) and Metalworking Machinery (except Machine Tools) (Series M35F) (1956).

[10] Moody's Industrial Manual, 2836 (1957). These sales include those of 12 domestic and foreign subsidiaries, most of which are machine tool builders.

[11] Machine Tool Shortages, Senate Small Business Committee, S. Rept. 1988, 82d Cong., 2d sess., 4 (1952).

[12] Saunders, What's Ahead for Machine Tools, Fortune, July 1953, 90, 91.

[13] Advice from BDSA, on the basis of companies required to file BDSAF-173, Report on Metalworking Machines. The available statistics in this field present serious difficulties, largely because Census and BDSA have not been in agreement on the definition of machine tools (see notes 2-4, supra). For example, according to the 1954 census of manufactures, there are 639 establishments producing machine tools (S. I. C. 3541) and 501 producing metalworking machinery (S. I. C. 3542). Census' S. I. C. 3541 is comparable to BDSA's cutting type; and Census' S. I. C. 3542 is in some measure comparable to BDSA's forming and shaping type. Census of manufactures figures, for 1954 value of shipments of machine tools and metalworking machinery, are $1,146,932,000 and $839,899,000, respectively. BDSA's figures for 1954 are $821,450,000 for the cutting type and $251,349,000 for the forming and shaping type. BDSA, Facts for Industry, Metalworking Machinery (Series BDSAF-173, 1954). Statistical difficulties are compounded because there are now three Facts for Industry series in this field: Series BDSAF-173 (in which BDSA covers both cutting type and forming and shaping type); Series M35E as successor to M34A (in which Census covers cutting type); Series M35F as successor to M34C (in which Census covers forming and shaping type). It should be observed that the data in the census of manufactures are not entirely consistent with Census Facts for Industry series. It is understood that BDSA and Census are presently attempting to reconcile their differences.

usually produce either the cutting type or the forming and shaping type, rarely both. Moreover, particular builders usually produce only a few of the S. C. C. categories. In 1957, for example, there were 57 producers of lathes and 54 producers of grinding machines, but only 6 producers of broaching machines and 8 companies building planers.[14] Within these categories, moreover, there may be larger or more specialized tools which are produced by only a few of the builders. For example, in 1955, turret lathes having a 3½-inch bar capacity or larger, which are of great importance to the production of heavy defense equipment, were manufactured by only 3 companies. Only 4 domestic companies then built vertical boring mills with tables of 60 inches or more in diameter. There were only two manufacturers of the large radial drilling machines.[15]

Machine tools building has been characterized as a feast-or-famine industry, being particularly sensitive to wartime demands and cyclic business trends. Thus, machine tools of the cutting type—after averaging about $168 million a year during the period 1936 through 1939—jumped more than sevenfold in the World War II years of 1942 ($1.32 billion) and 1943 ($1.18 billion). They then fell to $249.2 million in 1949. Then, because of the Korean conflict, shipments rose to $1.11 billion in 1952 and $1.14 billion in 1953. Thereafter, the downturn was not nearly as severe as in the post-World War II period. Shipments exceeded $800 million in each year from 1954 through 1957, except for 1955, when they fell to $634 million.[16]

By diversifying into other fields, some of the larger builders have undertaken, since World War II, to lessen their dependence on the machine-tool market. Ex-Cell-O Corp. branched out into aircraft parts and dairy machines.[17] The Warner & Swasey Co. manufactures hydraulic earthmoving machines, textile machinery, and aircraft service trucks. Van Norman Machine Co. diversified into automotive-maintenance equipment, electronics and textile machinery. The largest tool builder, the Cincinnati Milling Machine Co., manufactures grinding wheels and cutting fluid; and, through its subsidiary (Carlisle Chemical Works, Inc.), is in the paint, plastics, and chemical field. Sundstrand Machine Tool Co. makes aircraft accessories, hydraulic pumps, and pneumatic sanding equipment. Pratt & Whitney Co., Inc.,[18] makes dies and accessories for aircraft engines.

Moreover, many tool builders have acquired other companies in the field, thus broadening their machine tool line. Pratt & Whitney Co., Inc., maker of precision jig boring and tracer-controlled contour milling machines, has gone into the automatic-lathe field by acquiring Potter & Johnston Co. The Bullard Co., one of the largest manufacturers of vertical turret lathes and horizontal boring machines, purchased the Universal Boring Machine Co., maker of horizontal boring machines. Giddings & Lewis Machine Tool Co. bought Davis boring tool division of the Larkin Packer Co., Cincinnati Planer Co., Cincinnati Bickford Tool Co., and Kaukauna Machine Corp. Van Norman, builder of milling machines, bought the Morse Twist Drill & Machine Co. New Britain Machine Co., which specializes in multiple-spindle automatic screw machines, purchased Lucas Machine Tool

[14] Advice from BDSA on basis of companies required to report to that agency.
[15] Machine-tool programs, supra, pp. 158–159.
[16] Appendix, tables 1 and 2. New orders in the last quarter of 1957 were at the lowest level since 1949.
[17] Machine tools account for only about 28 percent of Ex-Cell-O's sales. Moody's Industrial Manual, 177 (1957).
[18] Formerly Niles-Bement-Pond Co., since 1955 a subsidiary of Penn-Texas Corp.

Co. of Cleveland, and Hoern & Dilts, Inc., manufacturers of boring mills. Ex-Cell-O Corp. entered the gear-cutting machine field with its purchase of Michigan Tool Co. The Cincinnati Milling Machine Co. now produces boring and grinding machines at the plant of its acquired subsidiary, Heald Machine Co.[19]

Foreign trade has been important to this industry. Exports have been a substantial part of its business, principally those to Canada, the United Kingdom and Western Europe.[20] In 1939, when our allies were rearming, more than 40 percent of production was exported. During the period 1947–50, inclusive, exports ranged from 25 to 34 percent of domestic output. During the period 1952–56, exports fell to from 10 to 15 percent of total domestic production. However, they still exceeded in dollar amount the exports of 1938–39.[21]

On the other hand, the Nation's tool builders are now facing increased competition from foreign producers, not only for foreign markets, but for the domestic market as well. Prior to 1951, imports of all types of machine tools were less than 1 percent of domestic production. They increased to 3.7 percent in 1952 and in 1957 (6 months) were at the rate of 3 percent.[22] For the period 1947–49, imports averaged less than $1.5 million; for the period 1954–56, they averaged more than $20 million.[23]

Foreign production, since European recovery, has some competitive advantage in lower labor costs. Machine tools demand high precision and are produced in small volume. Labor costs may be as high as 50 percent of the product cost, as against 10 percent for a mass-production industry.[24] To cope with this competitive threat to foreign markets, as well as other problems, a number of American tool builders have opened plants abroad.[25]

C. INDUSTRY DEVELOPMENTS, 1938–50

Machine-tool supply was a serious bottleneck in our World War II effort, despite the largest production volume in history. In 1938, United States builders shipped only 34,000 tools, one-fifth Germany's total. In 1939 and 1940, Allied rearmament increased United States production to 51,500 and 110,000 units, respectively.[26]

After Pearl Harbor, with Government assistance in the form of pool orders, purchases, loans, and superpriorities, the industry attained new highs. At its peak in 1942, it produced 307,000 tools worth $1.3 billion. Its 1943 record was only slightly less, but, thereafter, production declined. During 1945, 103,000 units were produced at a valuation of $423.7 million. Between World War II and Korea was a period of declining business for machine-tool makers, with a number forced out of the industry. Many of the tools acquired for high wartime production were still useful, and the Government's

[19] Barron's, July 8, 1957, 11, 13; Fortune, July 1953, 90, 92–93; Moody's Industrial Manual (1957).

[20] Machine tool builders have formed three export trade associations under the Webb-Pomerene Act (40 Stat. 516, 517; 15 U. S. C. 61–65), principally involving export trade with Latin and South America and Japan. These export groups are Amertool Services, Inc., American Machine Tool Export Associates (Amtea), and Machine Affiliates.

[21] Appendix, tables 1, 3.

[22] Appendix, tables 1, 4.

[23] Since 1948, the United States tariff on most machine tools has been 15 percent ad valorem. Machine-tool programs, supra at 169.

[24] Ibid. Three out of eight jobs in the machine tool industry require highly skilled workers. Progress Report No. 13, Joint Committee on Defense Production, S. Rept. 1107, 82d Cong., 2d sess., 62.

[25] For example, the Cincinnati Milling Machine Co. has subsidiaries in England and Holland. Sundstrand Machine Tool Co. operates through subsidiaries in Canada, France, and Sweden. Ex-Cell-O has subsidiaries in Canada and England.

[26] Appendix, tables 1 and 2. While the text discussion relates specifically to cutting type tools, substantially the same relative proportions apply to the forming and shaping tools.

war-surplus sales cut heavily into the smaller market. By 1949, production had declined to $249 million. Some 57 builders had left the industry, 38 through liquidation and 19 through acquisition by other builders.[27] As a result, the opening of the Korean conflict found the industry in a weak economic condition.

II. DEFENSE EXPANSION FOR THE KOREAN EMERGENCY

When the Korean conflict broke out in June 1950, it was not recognized in all quarters that the machine-tool situation would need governmental attention. Machine-tool builders had idle capacity and the Government had thousands of tools in reserve, even after selling large numbers as surplus. By 1950, the Nation's factories were equipped with 2.2 million machine tools, as against 1.2 million in 1940.[28]

Nevertheless, 45 percent of the tools were more than 10 years old and half of these were more than 20 years old.[29] It was found, as stated by a Deputy Administrator of the Defense Production Administration, that—

> existing tools were not adequate or satisfactory for new weapon production. The tools of 1940 were unable to manufacture the armament of 1950, particularly in the aircraft field, where jet engines were supplanting the piston type. * * *[30]

From July 1950 to January 1951, machine-tool orders almost trebled those of the previous 6 months, although shipments increased only 46 percent. The ratio of unfilled orders to shipments, which had averaged about 5 to 1 from January to June 1950, jumped to almost 12 to 1 in December of that year.[31] While the World War II backlog of orders never exceeded 13.4 months,[32] there was a 2-year backlog by September 1951. And machine tools had become the No. 1 bottleneck of the Korean conflict.[33]

In this critical situation, the Government undertook to expand the industry by pool order, facilities expansion, and elephant tool programs.[34] The machine tool effort, in dollar value, was the largest in gross transactions certified under the Defense Production Act. For these programs, ODM certified borrowing authority funds totaling about $1.6 billion, at a probable ultimate net cost to the Government of about $60 million.[35] In addition, accelerated tax amortization was made available, price ceilings were eased, and improvements were made in the scheme of priorities and allocations.

Like other Defense Production Act programs, this was administered under ODM supervision with Department of Commerce's NPA and General Services Administration as the delegate agencies.[36] The programs ultimately proved effective in helping break the machine

---

[27] Machine-tool programs, supra, p. 156.
[28] Id., at 158. Appendix, tables 5 and 6.
[29] Progress Report No. 13, supra, p. 8.
[30] Report of the Senate Select Committee on Small Business, Machine-Tool Shortages, S. Rept. 1988, 82d Cong., 2d sess., 23 (1952).
[31] Progress Report No. 13, supra, pp. 12, 13.
[32] Machine Tool Programs, supra, p. 158.
[33] Progress Report No. 13, supra, p. 80.
[34] After termination of the Korean conflict, an M-day pool order program was developed for use in any future emergency. A marine turbine and gear program is presently held in abeyance, pending submission of new Department of Defense requirement estimates. See sec. III, infra.
[35] Office of Defense Mobilization, Report on Borrowing Authority, 9–11, 25–26 (GSA, September 30, 1957).
[36] ODM succeeded the Defense Production Administration in 1953, and BDSA succeeded National Production Authority in the same year. See, report of the Attorney General under the Defense Production Act, dated November 8, 1957, pp. 17–21, for a complete outline of the structure of agency delegation under the Defense Production Act.

tool bottleneck.[37] From $378.5 million in 1950, shipments climbed to $788.2 million in 1951, $1.3 billion in 1952, and were almost $1.4 billion in 1953.[38] Production in 1952 and 1953 was only about $100 million less than in the World War II years of 1942–1943, the highest in this Nation's history.[39]

A. CEILING PRICES, PRIORITY RATINGS, AND ALLOCATIONS

1. Ceiling prices

The general ceiling-price regulation, issued by the Office of Price Stabilization on January 26, 1951,[40] froze each seller of the affected commodities, including machine tools, at the highest price he had charged between December 19, 1950, and January 25, 1951. Most of the machine tools delivered during that period had been ordered many months earlier, at the prices then prevailing. The machine-tool builders argued that such a ceiling was unrealistic in that it did not reflect the later increase in labor and materials cost. A new regulation, CPR 30: Machinery and Related Manufactured Goods, was issued on May 4, 1951.[41] This provided a formula for computing ceiling prices which would reflect certain of these later cost increases.

OPS later modified this regulation [42] to permit upward adjustment for such items as overtime, multiple-shift operation, and subcontracting.[43] The final significant price-ceiling adjustment, revision 1 to supplementary regulation 2 of August 21, 1951,[44] provided that (*a*) the base-period price could be increased by 12 percent; (*b*) additional adjustments could then be made to reflect increased costs of labor and materials as of September 9, 1951.

2. Priority ratings

During the emergency period, machine-tool builders needed priority assistance to obtain scarce raw materials and components. From the inception of the priorities system, in October 1950, special priority ratings were needed to acquire machine tools.[45] When a rated order was placed on the toolbuilder, he could extend the rating to obtain the necessary materials to fulfill it.[46]

Thereafter, additional priority assistance for machine-tool builders was given by a series of regulations. On February 28, 1951, the pool-order program, under NPA Order M–40,[47] provided that machine-

[37] Reporting in 1952, the Joint Committee on Defense Production and the Senate Small Business Committee concluded that although shortages continued to exist for certain defense-needed types of machine tools, the major bottlenecks had been broken, Progress Report No. 13, supra, p. 82; S. Rept. 1988, supra, p. 44.

[38] Appendix, tables 1 and 2.

[39] The number of tools produced (cutting type) in 1952–53 was far less than in 1942–43: 188,300 compared to 573,000 in the earlier years. However, the dollar value of the tools, in the 2 periods, was more nearly comparable because the later-made tools were often much more complex, and the price level had risen about 100 percent. S. Rept. 1988, supra, p. 36; See Saunders, What's Ahead for Machine Tools, Fortune, July 1953, 90–91; appendix table 7.

[40] 32A C. F. R. 1451 (1951, revised).

[41] 32A C. F. R. 641 (1951, revised).

[42] Supplementary regulation No. 2 of June 27, 1951, 16 F. R. 6246; general overriding regulation 15 of July 16, 1951, 16 F. R. 6834.

[43] Subcontracting by the toolbuilders became of the greatest importance in increasing output. By early 1952, the toolbuilders, often with the help of NPA, had placed subcontracts for parts, components, and even whole machines with some 1,200 companies, 1,000 of which had less than 50 employees. The subcontractors accounted for more than 20 percent of the entire machine-tool output, a greater percentage than that achieved during the World War II peak year, 1942. Hearings before a subcommittee of the Senate Select Committee on Small Business, 82d Cong., 2d sess., pp. 83–84 (1952).

[44] 32A C. F. R. 688 (1951, revised).

[45] Ordinarily, a defense contractor could extend the rating of his prime contract's product to acquisition of materials necessary for its production. The shortage of machine tools, however, required that an exception to this rule apply to such tools, and a special approval was required before a defense contractor could obtain a priority rating for a machine tool.

[46] NPA Regulation 2 of October 3, 1950, 15 F. R. 6632, and BDSA Regulation 2, as amended, 18 F. R. 1684.

[47] 16 F. R. 2001.

tool builders could use a priority rating to obtain materials for building pool-order machine tools. As discussed elsewhere,[48] the pool-order program was not at first widely accepted by the industry.

On May 14, 1951, a special interim provision for ratings for machine-tool builders was made,[49] pending full development and operation of the controlled-materials plan. During the last quarter of 1951 and until July 1, 1953, materials requirements of tool manufacture were scheduled under the controlled-materials plan. In December 1951, machine tools were placed for priority purposes on a substantial parity with certain of the direct military items.[50] The priority rating, "DO Z–2," thereafter permitted them to secure materials both from mills and warehouse distributors, which was of particular benefit to the smaller builders whose normal supplies came from warehouse distributors. This special rating, combined with increased allotments of materials afforded the industry under the controlled-materials plan, assured the machine-tool manufacturers of sufficient supplies to meet their defense-expanded requirements.

3. Allocations

In February 1951, stringent control was established over machine-tool delivery, under NPA Order M–41, February 28, 1951.[51] As originally issued, the order allocated 70 percent of each builder's output for service purchasers, those contractors whose deliveries were either directly to the armed services or to a prime contractor for military delivery. Within the 70-percent category, quotas were established for each of the services. The remaining 30 percent of tool output could be shipped other purchasers, although priority ratings must be observed. NPA could transfer orders from one builder to another, and shipments from one customer to another.

For almost a year, no formal basis was established for allocation of the 70-percent service deliveries on the basis of relative military urgency. The problem was met during this period by special NPA diversion directives in particular cases. In January 1952, the Department of Defense compiled a list of military programs according to relative urgency, and this list was translated by NPA into a numerical preference list to establish the relative priorities for deliveries within the service share.[52] This list, modified from time to time, still governs allocation of service shipments.[53]

B. THE KOREAN POOL-ORDER PROGRAM

The so-called pool-order program was the largest of the Korean defense-expansion programs for this industry. The technique of pool orders had been used successfully in World War II. Under it, the Government would contract for the production of specific tools it foresaw to be necessary for future use by defense contractors. After a tool was built, the Government would pay its cost if the contractors did not buy it.

[48] Sec. II–B, infra.
[49] NPA Order M–61, 16 F. R. 4540.
[50] Amendment 1 to NPA Regulation 2 of December 11, 1951, 16 F. R. 12513.
[51] 16 F. R. 2002.
[52] NPA Order M–41, as amended April 18, 1952, 17 F. R. 3492.
[53] Order M–41, as amended February 5, 1954, 19 F. R. 749, is still in effect. For jig-boring, jig-grinding, jig-milling machines and milling machines No. 4 and larger, military orders are still entitled to take up to 70 percent of monthly production. For other machine tools, military orders are entitled to take up to 40 percent of monthly production.

In the mobilization planning before Korea by the Munitions Board and the National Securities Resources Board, so-called phantom pool orders were drafted for immediate effectuation on M-day. They were intended to achieve full-scale production at the beginning of any national emergency without awaiting tool orders from defense contractors. However, it was not until 7 months after the outbreak of the Korean conflict that the first pool-order contracts were tendered. By 1952, when the program was in high gear, the toolbuilders were already deluged with private orders. Accordingly, the program actually operated, in the main, as an underwriting of existing contracts, guaranteeing against loss in the event contracts were canceled because of shifting military requirements.[54]

Under the program,[55] NPA selected the producers with whom GSA would contract, and it established delivery requirements, prices, size, type, and quantity of items to be ordered from each producer. In this, NPA relied partly on the advice of the Department of Defense as to military requirements and on its own information as to the current status of machine tool production.

At first, most producers were dissatisfied with the financial and other terms of the contracts offered. They were also still pressing for adjustment of ceiling prices.[56] By midsummer 1951, only 19 contracts had been executed, covering $56,862,009.50 worth of tools.

After July 9, 1951, when ODM issued document No. 7 on machine-tool expansion, a new form of pool order contract was adopted.[57] This liberalized contract limited the Government's right of setoff against money payable under the contract, if assigned for financing purposes.[58] Working capital could be advanced up to 30 percent of the contract amount.[59] The guaranty was to be extended to the actual date of delivery of the tool to a purchaser instead of ending when a firm order for its purchase was received. Moreover, provision was made to give additional protection to the builder in the event that a private purchase order was terminated before completion of the tool's manufacture. These changes proved effective in securing industry acceptance of the program.

Ultimately, between January 19, 1951, and December 31, 1952, GSA placed 114 pool order contracts. As of the latter date, these contracts covered production of 94,921 machine tools valued at $1,321,783,107.74.[60] Later developments consisted only of modifications of these contracts. In the operation of the program, more than 99 percent of the tools covered by pool orders were sold to private producers and there was no occasion to invoke the guaranty provisions. Only 835 tools were actually taken over under the guaranty, and of these, 426 have since been resold. The remaining 409 tools are carried at a cost of $5,156,488.[61] As of September 30, 1957, it was estimated

[54] GSA, however, was obligated to pay only 82½ percent of the contract price of the tool. This was to cover the cost of manufacturing, but not selling cost or profit.

[55] See Progress Report No. 13, supra, at 71. See also NPA Order M-40, February 28, 1951, 16 F. R. 2001; NPA Order M-41, as amended, 32A C. F. R. 2031 (1951 revision).

[56] See sec. II-A, supra, for a discussion of ceiling prices.

[57] Progress Report No. 13, supra, pp. 34-36.

[58] Authorized by 65 Stat. 41 (1951), 31 U. S. C. 203 (1952).

[59] Under the revised contract, 29 firms received advances totaling $53.7 million (appendix, table 12). Advances under this program exceeded those under any other program under the Defense Production Act (Joint Committee on Defense Production, Progress Report No. 38, 85th Cong., 1st sess., p. 19). By December 1957, all but $166,086 has been repaid to GSA, of which $69,697 has been written off as uncollectible and $96,389 is presently in litigation for collection. Although not a direct part of pool orders, the guaranty by GSA of private loans under Defense Production Act, sec. 301, was also used in aid of the objectives of the program. Under this, GSA guaranteed 14 V loans, totaling $31,212,000. As of December 12 .1957, only 2 loans, totaling $3,359,559, were outstanding (appendix, table 13).

[60] Appendix, table 10.

that the probable ultimate net cost of this program to the Government would be approximately $8.2 million,[62] less than 1 percent of the value of the tools.

This report reviews the pool order program only in its broad aspects. Examination of the details of the transactions of the thousands of tools involved would require an effort greater than could be devoted to it within the present survey's scope. Moreover, examination of that mass of detail would not have been fully effective, in view of the inadequate information on industry structure and individual company performance available to us. In any event, from the general circumstances surrounding the program, it seems most likely that it had little effect on the industry's competitive status.

On its face, the program might seem to suggest a disproportionate grant in favor of a few builders. Some 66 percent of the total orders covered by this program were held by 17 companies which are listed among the industry's largest.[63] Of the more than 300 toolbuilders, only 114 received pool order contracts.

However, it seems fairly assured that the program had little if any disproportionate effect. The total subsidization involved in the program was minimal. The participation of all was sought, within the limits of the capability of each, to produce the tools required. There appear to have been no serious complaints from any segment of the industry or from individual builders of lack of adequate opportunity to participate in the program.

Finally, it must be pointed out that the program largely followed the pattern of orders placed by private defense contractors for the tools they considered necessary. Because of delay in widespread participation by toolbuilders, most of the orders for tools necessary to defense requirements were already placed when the pool order contracts were executed. Consequently, while the guaranty undoubtedly aided production, it was only of minimal effect in directing the allocation of business. Any disproportion, therefore, could not be attributed to the pool order program itself.

C. FACILITIES EXPANSION

Machine tools are needed for manufacture of other machine tools. One bottleneck in expansion of the industry was its insufficient supply of the necessary tools. Accordingly, the Government undertook to aid toolbuilders in expansion of their facilities by two alternate methods. One was accelerated tax amortization, under which the builder financed privately the tools necessary for expansion.[64] In the case of those builders unable to finance the acquisition of tools or unwilling to risk the investment, the Government undertook a program to purchase such tools and lease them to members of the industry.[65]

The latter program was initiated on October 10, 1951. A total of $50 million of borrowing authority funds was allotted by DPA. NPA informed the industry generally that the new assistance pro-

[61] Appendix, table 11.
[62] Report on Borrowing Authority, supra, p. 25.
[63] See appendix, tables 14 and 15 for lists of the largest companies in the cutting tool and forming and shaping tool fields. The lack of measure as to each company's relative position forecloses any analysis of individual share of pool orders.
[64] Discussed in II-E, *infra*.
[65] A small volume of other production equipment was also included in the program. The program additionally provided for expansion of other related industries, such as dies and jigs, gages, and cutting tools.

gram was in operation,[66] and invited the companies to submit formal application. The applications submitted were processed by NPA, and schedules were prepared for GSA as to the companies to be given contracts, and the number, size, and type of tools to be included in the leases.

GSA then negotiated the necessary contracts. The lease agreements, covering a 5-year period at a monthly rental of 1 percent of installed cost, also gave the lessees an option to purchase the tools. This activity continued until March 27, 1953, when the placing of contracts was suspended pending review by ODM. At that time, all original applications had been processed. There were still pending only a few new applications and some requests for upward revision of contracts already granted. These were all approved by ODM. By the time GSA's authority to enter contracts was withdrawn in July 1953, there were no further applications pending. So far as our examination discloses, no application filed by an established builder was denied. GSA and BDSA have advised that all toolbuilders with production capability and financial responsibility, who could substantiate need, were awarded contracts.

By June 30, 1955, GSA had acquired and leased all the tools certified by NPA as required. The program then included some 123 lease agreements involving 2,738 tools valued at $31.7 million.[67] Its probable ultimate net cost is estimated at $4.6 million, about 15 percent of the total value of the tools leased.[68]

As of June 30, 1957, 47 lease agreements remained in effect covering tools valued at $8.6 million. Receipts from the program included $15.4 million for rental and $14.1 million from the sale of 1,546 tools under the purchase option.[69]

The remaining agreements all expire in early 1958. It is anticipated that purchase options [70] will be exercised by a number of the lessees, thus further reducing the ultimate cost of this program.

This relatively small program was established to aid all members of the industry requiring this special type of expansion assistance, without limits as to size of the tool builder. However, it is clear that the smaller producers secured the majority of the contracts.

Thus, the larger firms in the main branches of the industry received expansion assistance in a proportion much smaller than the share of industry production they then held. In 1952, the 24 largest firms producing cutting-type tools and the 20 largest firms producing shaping and forming tools collectively accounted for an estimated 53.6 percent of total industry shipments. In comparison, firms within this group received only 33.9 percent of the total value of facilities-expansion contracts. Moreover, as noted, it does not appear that any substantial number of applications by smaller companies were denied. On the contrary, it seems that the pattern of grants followed the pattern of applications, and the policies followed in this program therefore had little significant impact on the structure of the industry.

[66] By means of trade papers and at meetings of the Machine Tool Industry Advisory Committee.
[67] Appendix, table 16.
[68] Report on Borrowing Authority, supra, p. 26.
[69] Seventh annual report, supra, p. 246.
[70] Prior to the sale of the tools under the option provision, BDSA determines that the sale is in the interest of the national defense in order to have the tools installed and ready for operation in the event of emergency and recommends to GSA that such sale be made. No adverse recommendations have been made by BDSA to GSA to date.

The records on exercise of the option to purchase the expanded facilities indicate that on contracts completed by June 30, 1957, the smaller companies purchased 71.6 percent of the tools leased to them. To this extent, the program has resulted in some strengthening of the productive capacity of the weaker segment of the industry.

While the larger companies retained a somewhat higher percentage of the leased tools, this would seem to reflect only their greater financial ability to assume the risk that the tools may not be profitable in future operations. It does not indicate any basic discrimination in the purchase terms offered, since uniform terms were offered all companies.[71]

D. ELEPHANT TOOL PROGRAM

Production to meet developing military requirements calls for an increasing number of the large general-purpose machine tools known usually as elephant tools. A single tool of this kind may require from 12 to 30 months to produce, and cost up to $300,000. A special program was devised in 1952 to increase the industry's capacity to produce these larger items. It involved rental to builders of tools capable of producing such extremely large machine tools.

The program fell below original expectations, however, because so few producers were interested in participating.[72] Apparently, only a few builders were capable of producing these giants. Only three builders entered the program. They are the G. A. Gray Co., Onsrud Machine Works, Inc., and Giddings & Lewis Machine Tool Co. Only the latter is included among the group of the largest producers in the industry.

A total of 320 new machine tools were installed in their plants under 10-year leases. The tools cost the Government about $5 million; and by July 1957, $1.8 million had been returned in rental charges. Thus, it appears that the full cost may be recovered by the Government. The rental charge is 1 percent per month of the acquisition cost of the tool, for the period the tool is available to the user, so long as his volume of business is above a specified level. Thereafter, the rental charge applies only if the tool is actually in use, and the Government pays maintenance and storage costs on those unused.[73]

E. ACCELERATED TAX AMORTIZATION

The grant of accelerated tax amortization privileges played an important part in the defense expansion of machine-tool capacity and supply.[74] The machine-tool builders were somewhat reluctant to expand capacity without such grants. World War II expansion had saturated the postwar market, and the increased capacity sat idle. Since depreciation of their equipment normally ranged up to 25 years,

[71] On all sales of tools, rental payments already made were credited against the sale price. However GSA preferred to dispose of the tools on an immediate cash basis rather than supervise the details incident to sale on extended terms. Accordingly, it set a 5-percent-interest charge on the latter type of sale to discourage its use. Nevertheless, the terms were made liberal to induce all lessees to purchase the equipment they held. They provided for a 10-percent downpayment and annual payments for a period up to 5 years. The annual payments set on a 5-year basis were comparable in amount to the earlier rental payments.

[72] In 1952, DPA authorized $50 million for the program. The amount was trimmed to $7.5 million by 1957. Joint Committee on Defense Production, Third Annual Report, H. Rept. No. 1097, 83d Cong., 2d sess., 26 (1954); GSA, Report on Borrowing Authority, supra, p. 10.

[73] See seventh annual report, supra, pp. 103–104, 246. For current proposals involving elephant tools, see III A. 3, infra.

[74] For a detailed discussion of tax amortization certificates generally, see Report of the Attorney General Pursuant to Section 708 (e) of the Defense Production Act of 1950, as amended, dated February 9, 1956.

the privilege of amortizing new facilities over a 5-year period was sought by the industry as a hedge against possible recurrence of that situation.

After some delay in instituting the program, the first application was granted in February 1951 and, by December 1951, 137 applications had been allowed for more than $53 million.[75] These applications were apparently granted pursuant to informal, interim expansion goals. Formal goals were not established until June 1952 for machine tools and until December 1952 for elephant tools.

Goal 123, for the cutting type of machine tools, was established on June 30, 1952, and was twice revised upward. The last revision on June 1, 1953, called for $138,620,000 of capital investment in added production capacity over that in existence on July 1, 1950, to be completed by January 1, 1954. Goal 124, presses and forging equipment, established on June 24, 1952, called for $28 million of capital investment in added production capacity to be completed by January 1, 1954. Goal 199, elephant tools, established on December 4, 1952, sought productive capacity for an additional 450 elephant tools by the same target date.[76]

In December 1953, when machine tools were no longer in short supply, goals 123, 124, and 199 were suspended.[77] They were formally closed on January 29, 1954.[78]

Breakdowns, showing the tax amortization certificates granted and denied as of January 9, 1958, under each of the goals, by name of companies, are set forth in appendix tables 17 to 21, inclusive.

Thus, under goal 123 (cutting type of machine tools), a total of 407 certificates of necessity were granted for facilities costing about $130 million, of which almost $91.4 million was deemed eligible for rapid tax amortization.[79] The certificates covered investment in buildings and production equipment, including machine tools, determined to be necessary for defense expansion of productive capacity. Of this total, 22 of the 24 largest tool builders, who collectively accounted for about 50 to 55 percent of total shipments of cutting type tools,[80] received 92 certificates of necessity for $63 million in facilities, of which $43.7 million was declared eligible for rapid tax amortization. Thus, these 22 companies were awarded 47.8 percent of the total dollar amount deemed eligible for rapid tax amortization under goal 123. The remaining 52.2 percent was distributed among a number of smaller companies in the industry.[81]

A total of 78 applications were certified under goal 124 (forming and shaping type of machine tools) for facilities costing $20.8 million, of which $13.4 million was deemed eligible for accelerated tax amortization.[82] Of certificates granted, 29 were received by 11 companies which are among the 20 largest. These covered facilities costing $11 million, of which $6.8 million were eligible for accelerated amortization. This group of 11 companies thus received about 51 percent of the total

[75] Progress Report No. 13, supra, pp. 46, 47.
[76] Goals 123, 124, and 199 are for machine tools of the cutting and forming types and are within the scope of this report. Other expansion goals, within the broader area of metalworking equipment, but beyond the scope of this report, are: No. 125, abrasive products; No. 127, metal cutting tools; No. 128, dies, jigs, and fixtures; and No. 140, miscellaneous metalworking equipment.
[77] DMO VII-6, 32A C. F. R. 49 (Rev. 1956).
[78] DMO VII-6, Amendment 1, 19 F. R. 856 (1954).
[79] Appendix table 17. Two applications totaling $4.4 million were pending as of January 9, 1958.
[80] This represents an estimate; individual company data were not made available.
[81] The goal included a 30-percent share set aside for smaller businesses, as determined under standards set up on consultation with Smaller Defense Plants Administration. This included those companies with up to 400 employees.
[82] Appendix, table 19.

dollar amount of grants under goal 124. These 11 companies, at the time, apparently accounted for about 40 to 45 percent of the total business in the field.[83]

Four applications from 3 companies were filed for rapid tax amortization under the elephant tool goal, No. 199. These were all granted. Certificates of necessity were issued for $3.9 million in facilities, of which $3.5 million was determined to be eligible.[84]

A number of applications were denied under goals 123 and 124. Under the former, 53 applications requesting a total of approximately $14.9 million in rapid tax amortization were denied.[85] Under goal 124, 17 applications were rejected, representing only $1.2 million in facilities.[86] It is apparent in both cases, however, that only a minor portion of the value of total facilities for which amortization was requested were denied. And of the value of facilities denied under both goals, about half was represented by the largest companies. Various reasons are given for the denials. For example, some proposed expansions covered types of tools in adequate supply. Occasionally, the proposed facility was a replacement instead of expansion. In some cases, the facility was built more than 6 months before the applications were made. And, finally, some were denied because the goal was closed.

Among the 53 applications denied under goal 123, 9 were applications from 6 of the 24 largest cutting-tool builders. These accounted for $7 million, or 47.3 percent of the total of $14.9 million in denials. Of the 17 applications denied under goal 124, 7 were applications received from 4 of the 20 largest forming and shaping tool builders. These totaled $620,000, or 51 percent of all the denials under this goal.

While a fully effective review would require more detailed industry structure figures, the examination possible reveals little probability that the program effectively discriminated against any general segment of the industry. Such a program can operate only on the basis of application by members of the industry. However, on the basis of facility value, the denials under the program were relatively inconsequential. Accordingly, it would seem that most builders from all segments of the industry who did submit applications complying with the legal requirements of the program actually received the privileges of tax amortization.

On the basis of the material available to us, it appears that the larger companies received benefits under the program roughly proportionate to their share of the industry's business. In addition, they accounted for fully half of the denials. Generally, therefore, the grant of certificates followed the pattern of applications, and the administration of the program apparently favored no particular segment of the industry.

III. CURRENT PROGRAMS AND PROBLEMS

Nearly all the Korean defense expansion programs covering the machine tool industry have been completed. There are three programs which have current implication, two of which are in the plan-

[83] The list furnished by BDSA shows that the 20 largest companies had about 65 percent of total forming and shaping tool production at that time. Based upon our estimates of the probable position of the 11 grantees within this group, it is believed that they did about two-thirds of the group's total business.
[84] Appendix, table 21.
[85] Appendix, table 18.
[86] Appendix, table 20.

ning stage. In addition, the wide employment of Government-owned tools in connection with defense production, although not a direct part of defense expansion of the machine-tool industry, is presently relevant.

A. CURRENT DEFENSE PRODUCTION ACT PROGRAMS

The three programs currently in force or undergoing current examination are: the M-day pool-order program, the marine turbine and gear program, and the stockpiling of elephant tools.

1. M-day pool-order program

In 1956, ODM and BDSA instituted a pool-order program patterned after those operating during World War II and Korea. Its purpose is to insure that large-scale production of machine tools will begin immediately on the outbreak of hostilities. Unlike the phantom-pool orders prepared before the Korean conflict, GSA has already executed contracts with toolbuilders which call for production of machine tools on Government order, and guarantee the toolbuilders a buyer for the tools.[87] No advances or expenditures are to be made under the contracts unless they are triggered by Government order. Thus far, the contracts provide only for cutting-type tools. The contracts are periodically reviewed to insure that the tools covered still meet defense requirements.

ODM has certified a total of $256 million in gross transactions for this M-day program and has allocated borrowing authority funds in the amount of $21 million. Of this, $18 million is for working capital and $3 million for probable ultimate net cost.[88] As of January 14, 1958, there were 80 contracts, covering more than 14,000 tools valued at approximately $200 million.[89] Of these, 14 of the 24 largest cutting-tool builders received 16 contracts covering about 6,000 tools totaling about $122.5 million, or approximately 61 percent in dollar value.

The program is nearing completion. BDSA advises that—within the overall financial limits set by ODM and the dispersal directives issued by ODM—producers received contracts on the basis of their demonstrated ability to produce the sizes and types of tools needed for M-day mobilization. BDSA has endeavored to interest small producers in participating, and has kept the Small Business Administration informed of developments under the program.

2. Marine turbine and gear program

A program which is being evaluated in terms of changing concepts of M-day requirements is that of increasing industry's capacity to build marine turbines and gears. This partially involves procurement, installation, and leasing of the machine tools needed to build the turbines and gears. In 1956, ODM authorized $50 million in borrowing authority funds for this program, but, after considerable study and negotiation by GSA with 5 turbine and gear producers, the program is presently being held in abeyance pending Department of Defense review of its estimates.[90]

[87] Seventh annual report, supra, pp. 104-105.
[88] Report on borrowing authority, supra, pp. 10, 11, 26.
[89] Appendix, table 22.
[90] Seventh annual report, supra, pp. 104-105.

3. Stockpiling of elephant tools

In 1955, a BDSA study indicated that, for mobilization purposes, there was a shortage of more than 200 elephant tools. BDSA recommended a program to procure such tools in advance of M-day; but, in view of shifting mobilization requirements, ODM deemed it necessary that further study and appraisal be made.[91] BDSA renewed its recommendation in 1957. However, the program is presently being held in abeyance pending resolution of the M-day requirement problem.[92]

B. PRIVATE USE OF GOVERNMENT-OWNED MACHINE TOOLS

On the strength of World War II experience, it is plain that the circumstances of use and disposal of Government-owned machine tools may have a direct effect on the machine-tool industry. In part as a result of defense expansion of the industry, the Government now owns about 323,000 machine tools,[93] of which 293,000 belong to the armed services.[94]

Pursuant to programs of long-range mobilization planning or immediate defense procurement, about 143,000 tools, valued at $1.5 billion, have been placed by the Department of Defense in the hands of defense contractors,[95] under lease or price offset arrangements. To some extent, these tools supplant those which might otherwise be purchased or leased from the machine-tool industry. To that extent, they present problems similar to those faced by the industry as the result of the Government surplus disposal program after World War II.[96]

The adequacy of current charges in individual contracts,[97] however, cannot be measured, because of the difficulty of ascertaining the basis of consideration involved in offset contracts. Seven-eighths of the armed services tools in private hands are covered by such contracts. These provide that consideration for use of the tools shall be obtained through compensating offset against the end-product price paid by the Government, rather than by a straight cash rental. However, there has never been any requirement in the Armed Services Procurement Regulations that any specific dollar value of such offset be set forth in the contract or elsewhere.

---

[91] See machine-tool programs, supra, pp. 28–30.

[92] Seventh annual report, supra, pp. 102, 104.

[93] See appendix, table 27.

[94] The armed services machine tools constitute a mobilization reserve having a value estimated at $3 billion. In order to determine policy in this field, ODM in 1952 appointed an Advisory Committee on Production Equipment, chaired by Harold S. Vance. The Vance Committee issued a report January 12, 1953 (which, with ancillary material, was reprinted in hearings before a subcommittee of the Senate Small Business Committee, 84th Cong., 2d sess., pp. 115–132 (1956)). That report asserted that the Department of Defense should have on hand a fully adequate mobilization reserve of machine tools, and should have a program of annual replacement to take care of wear and tear and obsolescence. Changing mobilization requirements in light of new strategic concepts are apparently a factor in delaying full implementation of the Vance Committee recommendations. It appears, however that the armed services are engaged in a limited program of modernizing their inventory of tools. See DMO VII–7; see Joint Committee on Defense Production, Sixth Annual Report, H. Rept. No. 1, 85th Cong., 1st sess. 55 (1957); and seventh annual report, supra, pp. 108, 167.

[95] Although the use of Government-owned machine tools in nondefense production may once have been a problem, the Office of Defense Mobilization—on October 9, 1953—promulgated DMO VII–4 (1) (e) (later amended by amendment No. 1, January 6, 1956), which provides that no Government-owned production equipment shall be used for nondefense production except on ODM's approval. That regulation limited approval to extraordinary cases where such use is in the best interest of national defense, although implementation of the order continues to present some problems. However, at present, the amount of such use is minimal.

[96] See supra, pp. 15, 16. There is some concern with Government surplus disposal in this industry. However, no general program has yet been established for large-scale disposals, and this problem is not treated in this report.

[97] For an expression of the industry's views on this subject, see generally a statement by the National Machine Tool Builders' Association, set forth as appendix 7 to machine-tool programs, supra. In addition, leasing at inadequate rates deprives the Government of an appropriate return on its investment, as well as having an adverse competitive effect on defense contractors using their own tools.

In 1955, an interagency task force, on which the armed services were represented,[98] was established to work out a uniform policy covering all Government-owned machine tools. The group met at intervals during a 2-year period. It reached general agreement on establishment of a uniform formula for calculating rental charges for all Government-owned equipment.[99] It also agreed that the specific dollar charges so calculated should be specified as the rental consideration in offset contracts or in the contract files.[100]

These recent changes in basic Government policy should bring improvement. Specification of the exact rental basis of all Government-owned machine tools will make possible establishment of uniform arrangements at rates sufficient to prevent an unnecessarily heavy threat to the machine-tool industry, principally to its smaller and weaker members. This would prevent impairment of the necessary mobilization base in this critically essential industry.

Of course, existing armed services offset contracts, covering by far the greatest number of Government-owned tools in private use, were not drafted in conformity with the provisions developed by the interagency task force. It is understood that some armed services offset contracts are now being drafted to include such provisions. However, although armed services representatives joined in the task-force agreement on this subject, the Armed Services Procurement Regulations have not as yet been amended as of February 1, 1958, to conform to the ODM regulation.

IV. COMPETITIVE EFFECTS OF DEFENSE EXPANSION

I am reluctant to attempt the determinations sought by the statute's terms in respect to this industry. The absence of detailed industry data makes it impossible to make more than a tentative determination as to the competitive effects of the various Defense Production Act programs for expansion of machine-tool supply. The general outlines of the industry give an appearance of a broad competitive base, although there are some indications of a trend toward concentration. However, this cannot be fully evaluated as to cause or effect with the information at hand. Examination of the details of the various expansion programs indicates that the policies of the Government agencies responsible probably have no direct bearing on this trend. Again, final conclusions in that regard demand more informed examination.

A. PROBLEMS OF ANALYSIS

This survey concerns an industry unusually complex in its competitive structure. It contains a great many companies, preponderantly small and closely held. None of them produce all of the wide variety of tool types and sizes required by modern industry.

The variety in output itself poses a special problem. Within the general categories established to classify tools of similar type, there

[98] Other agencies having representatives on the task group were Business and Defense Services Administration and Maritime Administration of the Department of Commerce, Atomic Energy Commission, General Services Administration, and Small Business Administration. The group was chaired by a representative of the Office of Defense Mobilization.

[99] This agreement was incorporated by ODM in sec. 1 (D) of DMO VII-4 on June 19, 1957. It provides that the monthly rental rate shall consist of a percentage of the installed acquisition cost of the equipment, graduated with the age of the equipment as follows: Up to 2 years, 1¾ percent; 2 years through 6 years, 1½ percent; 7 years to 10 years, 1 percent; over 10 years, three-fourths of 1 percent.

[100] This was incorporated in ODM's DMO VII-4, on October 1, 1957, as sec. 1 (E) (1) (h). It was also provided, in sec. 1 (E) (2) (b) of this order that: "Government-owned production equipment should not be leased to private industry until its unavailability from private sources has been established."

are wide differences in size and adaptability. Machines within such a group are interchangeable only within certain limits. Consequently, producers of the same general type of tools may not actually be in direct competition. On the other hand, some general-purpose tools in different categories may be so flexible in application that their producers may directly compete with each other.

Meaningful analysis of such a complex industry is extremely difficult. Accurate and complete information is necessary to establish the position of the various companies in the industry, both generally and in their relation to the manufacture of comparable products. Unfortunately, much of this necessary information is presently unavailable to us. In lieu of detailed indicators of industry structure necessary for precise analysis, BDSA could supply us only with lists showing the estimated ranking of the largest companies within each of the two general branches of the industry in 1957. The lists also showed the percentage of business represented by each group as a whole during 1957 and 1952.[101]

B. CONCENTRATION IN THE INDUSTRY

The industry appears to have undergone little serious change in basic structure during the last 5 years of the defense-expansion period. There were 403 companies in the industry in 1952 at the height of defense-production activity. Today, with less production, there are 367 companies remaining.[102] The number of companies thus declined, but, in view of the large number still remaining, the industry still presents the appearance of a broad, competitive structure.

The rough measurements available, however, disclose some tendency toward concentration, although the degree, course, and possible effect cannot be ascertained with the indexes available. In the first 9 months of 1957, the 24 largest producers of cutting-type tools manufactured some 61 percent of all such tools, as measured by dollar value. In 1952, the same 24 companies had produced only 52.4 percent, so that the last 5 years saw a substantial increase in the share of the larger companies. In the same period, the number of producers declined from 305 to 277, almost 9 percent.[103]

The same tendency appears more pronounced in the forming and shaping field. In the first 9 months of 1957, the 20 largest producers manufactured 79.5 percent of the total of these tools by dollar value. These producers, in 1952, accounted for only 63 percent. The number of companies in this field declined from 98 in 1952, to 90 in 1957, a decrease of about 9 percent.[104]

---

[101] This, however, gives no indication of shifts in the two groups between 1952 and 1957. Some of these companies may not have been in such groups as of 1952. Moreover, the usefulness of such listing was impaired by the absence of several large companies which do not report information to BDSA. It is understood that if information were available, there would be at least two nonreporting companies in the group of the largest cutting-type companies. It is noted that a substantial part of defense expansion preceded 1952. Efforts were made to secure index figures going as far back as 1946. Prior to 1952, however, only Bureau of the Census statistics charted the industry. Those materials are likewise held closely confidential. Moreover, Census' use of the broader S. I. C. classification precludes any attempt to project the later S. C. C. data into the pre-1952 period, at least without access to individual company records.

[102] Advice from BDSA, on the basis of S. C. C. categories. It may be observed that the Census of Manufactures, based on S. I. C. categories, gave totals of 743 and 1,140 for 1947 and 1954, respectively. This wide discrepancy is presumably explainable on the ground that Census includes companies manufacturing such items as portable tools and home and light duty shop equipment in its classifications.

[103] Estimate from BDSA based on S. C. C. categories for the companies requested to report to BDSA. Census data, however, which are based on S. I. C. categories 3541 and 3542 (see notes 2–4 supra), show almost no increase in concentration in 1954 compared to 1947. Report of the Senate Subcommittee on Antitrust and Monopoly, Concentration in American Industry (committee print), 85th Cong., 1st sess., pp. 213, 302 (1957).

[104] Ibid.

When examination is made, category by category, it appears that these general tendencies are unevenly distributed over the industry. We received information as to selected categories of tools.[105] Included were 5 of the 9 categories of cutting-type tools, accounting for about 75 percent of the total cutting-type-tool shipments, and 4 of the 9 categories of forming and shaping tools, accounting for more than 85 percent of those tool shipments.

In the forming and shaping tool categories, there would appear to have been a substantial trend toward greater concentration of production among the dominant companies between 1952 and the present. No estimate, of course, can be given as to the proportion of this trend attributable to the growing dominance of any single company. During the first 9 months of 1957, 6 companies had 72.6 percent of bending and forming machines, but, in 1952, accounted for only 64 percent. In mechanical power-driven presses, 4 companies shipped 73.6 percent in 1957 as against 57.5 percent in the first quarter of 1952. Of the total of punching and shearing machine shipments in 1957, 6 companies produced 71.2 percent as against a 1952 share of 65.2 percent. The 8 companies with 73.3 percent of shipments of hydraulic and pneumatic presses in 1957 had 67.3 percent in 1952.

The figures for 1955, however, disclose that this tendency does not progress in a straight line between 1952 and the present. Those figures, included in table 25, appendix, give an indication that the greatest share of this concentration took place between 1955 and 1957, as defense orders decreased and after most expansion programs were completed.

There is a lesser trend to increased concentration in the cutting-tool field, and here the greatest increase also took place between 1955 and 1957, rather than from 1952 to 1955.[106] In 2 categories, grinding machines and milling machines, the dominant companies' share from 1952 to 1957 shifted upward only 1.8 and 3.2 percent, respectively. Of the total shipments of boring machines in the first 9 months of 1957, about 74.4 percent came from 6 companies, as against their 1952 production (first quarter) of 69.6 percent. What appears as a startling shift in the percentage of drilling-machine shipments by the largest companies, from 45.4 percent in 1952 to 73.4 percent in 1957, is largely only a change in classification of automated tools.[107]

Special study was given the lathe category which constitutes the largest of all machine-tool categories. The BDSA figures show that the 4 dominant companies shipped 37.3 percent of total lathe shipments for the first 9 months of 1957, as against their 36.9 percent portion in the first quarter 1952, a relatively stable share.[108] Some independent basis is available to weigh this analysis, which confirms this general picture of relative stability.

This Department undertook a direct survey of the industry. Questionnaires were sent to 42 builders of cutting tools and 20 builders of forming and shaping tools. The companies were asked to supply information as to company sales, broken down into the

[105] Appendix tables 24 and 25. The grouping of companies, without names, was carefully chosen by BDSA to preclude identification of any single company. Consequently, it is impossible to relate these groups to the overall list of dominant companies in the two branches of the industry. The periods covered were the first quarter of 1952, the year 1955, and the first three quarters of 1957.

[106] See appendix, table 24.

[107] Many of the transfer-type tools which had been previously classified under drilling machines, S. C. C. 3413, are now being classified under S. C. C. 3419.

[108] See appendix, table 24.

S. C. C. categories, for a 10-year period ending with the third quarter of 1957. Twenty-nine cutting-tool producers and 13 forming- and shaping-tool producers responded with replies to the questionnaire.[109] The request was unfortunately coincident with year-end inventory taking, and many companies delayed report for that reason. In addition, some responded by referring to reports already made to other agencies. As response was voluntary, some companies preferred not to reply.

Unfortunately, the companies failing to reply were in many instances the largest in the industry.[110] Analysis of the returns submitted shows that less than 45 percent coverage, in terms of value of shipments, was obtained in the overall cutting field, and less than 50 percent coverage in the overall forming and shaping field. It would be dangerous to attempt to arrive at conclusions as to the overall structure and competitive status of the industry on such a basis. However, returns in one category, lathes, were sufficiently complete to justify inclusion in this report.

The companies voluntarily responding to our request reported annual lathe shipments constituting between 80-88 percent of total industry lathe shipments over the relevant period.[111] The top 4 companies reported lathe shipments in 1957 constituing 48.8 percent of the total for the industry, a substantially larger percentage than the 37.3 percent reported by BDSA for the first 4 companies. The percentage ascertained by our survey ranged between 49.7 percent in 1949 and 45.2 percent in 1952, at the height of Korean production. Similarly, the percentage of shipment by the top 8 and the top 12 companies did not vary significantly, although it is considerably higher in both instances than that reported by BDSA. In short, while the initial degree of concentration in the largest companies was larger than the BDSA report, this independent study confirmed that agency's report as to the lack of any significant growth in the degree concentration in this category of machine tools.

Moreover, the greater detail available from this source permitted some consideration of the individual company shares. Through this period, those shares remained almost constant—ranging from a single year high (1949) for one company of almost 23 percent, down to a constant 2–3 percent for the smallest of this group.

From the information thus available as to the performance of this group of companies, it seems that the defense programs during the last 8 years have not had any adverse effect on the competitive base in this segment of the industry.

C. CONCENTRATION EFFECTS OF EXPANSION PROGRAMS

Special difficulties confront any attempt to examine the effects of defense expansion upon the competitive structure of the machine-tool industry. Defense production readiness requires machine-tool production capacity, but it more immediately requires that the user industries be equipped with tools already manufactured. Since 1950 the emergency program of enlarging the Nation's mobilization base has made great demands upon this industry. At the same time, necessary production of military goods for the Korean conflict and

[109] Appendix, table 23, contains a list of all the companies requested to furnish information and those complying with the request.
[110] Thus the companies ranking 1, 3, and 4 in the cutting field did not furnish information.
[111] See appendix, table 26.

the constant development of new weapon design, calling for changes in tool requirements, added a special urgency. Consequently, defense expansion programs in this industry have been more a response to the pressure of immediate need than a deliberate effort to create a production base.

Although there is some indication of a trend toward concentration in this industry, it cannot in fairness be attributed to defense expansion. While more than 90 percent of expansion aid went to the cutting-tool branch of the industry, yet that branch has apparently displayed a smaller growth in concentration than the forming- and shaping-tool branch.[112] In none of these programs was the total share of aid to the group of largest companies disproportionate to their share of production.

Significant too, is the fact that, in many of these programs, there were more benefits available than there were applicants. This would indicate that, if benefits were not accorded to any company or segment, it was by reason of failure to make application, rather than any discriminatory Government policy.

Finally, we have pointed out one category for which there was adequate detail. As to that category, lathes, industry performance over the relevant period corroborates the conclusion that these programs, taken generally, produced no serious anticompetitive effect.

One reservation must be made. There is, of course, the possibility that the expansion aids granted as to production of a particular category of tools might have contributed to a particular company's dominance in that category. The data available were not adequate to permit exploration of this possibility.

Part 2—Voluntary Agreements and Programs Under the Defense Production Act

In accordance with amended section 700 (e) of the Defense Production Act, this part reports upon the Attorney General's continuous study of the voluntary agreements and programs carried out pursuant to section 708 of that act.

There are outstanding 20 agreements, 5 of which are inactive. Under the sponsorship of the Department of the Army, there are 17 integration committees, 4 of which are in an inactive status. There are 3 miscellaneous agreements, 1 each under the sponsorship of the Department of the Interior, the Maritime Administration and the United States Information Agency. That sponsored by the Maritime Administration is currently inactive.

A. FOREIGN PETROLEUM SUPPLY AGREEMENT

This agreement, amended in 1956 to place a greater responsibility upon the Government rather than upon industry in the administration of the Committee's duties and responsibilities, continues to furnish valuable assistance to military and mobilization planners. The recruitment of a salaried full-time Government staff to replace the industry personnel employed to gather and organize data on foreign petroleum operations has continued. The Government staff now numbers 12 persons.

[112] See supra at 55.

That portion of the voluntary agreements, which, after suitable governmental findings and requests, would permit the participants to draw up plans of action to alleviate the disruption to petroleum supplies caused by emergencies such as the stoppage of the Suez Canal is not currently being utilized. The governmental agencies and departments concerned, however, believe that portion of the agreement to be of the greatest potential importance in the event of another threatened emergency. In my opinion, the contributions made and to be made to the national defense by the authorized activities of this agreement outweight the possible anticompetitive effects thereof.

B. ARMY INTEGRATION COMMITTEES

In my last report, I stated that an amendment to the agreements under which four of the Army's integration committees operated had been approved and that this amendment provided for the four committees to be placed in a standby status. The formalities under which the voluntary agreements operate then required that each of the participants in these agreements prior to the amendment be requested to participate in the agreement, as amended. All participants have been so requested but not all have as yet replied. The participants in the Artillery Mechanical Time Fuzes Committee have all accepted the request of the Director of the Office of Defense Mobilization. That fact was thereupon published in the Federal Register (23 F. R. 520). In the case of the integration committees on cartridge cases, burster casings, and military pyrotechnics, such publication must await acceptances of the requests by the participants. It should be added, however, that these committees are at the present time completely inactive and no meetings of the committee members are authorized.

There remain five integration committees sponsored by the Ordnance Ammunition Command which are considered active. Two of these, the ammunition loading (except small arms ammunition) and the small arms ammunition committee, have engaged in extensive productive activity during the quarter covered by this report. Two others, the propellents and explosives and the conventional artillery and mortar shell committees were active in the prior quarter. The remaining ordnance committee, the fin stabilized artillery ammunition and M31(T37) rifle grenade committee, intends to study and revise new specifications during the ensuing year. Its relative inactivity is partially attributable to the development of a new artillery round.

In the tank-automotive field, all six committees have engaged in extensive subcommittee work. The full committees of the committees on cast armor for tracklaying type vehicles; track for tracklaying type vehicles; light gun tank and allied combat vehicles; medium and heavy gun tank and allied combat vehicles; and heavy tactical trucks have met during the reporting period. The remaining light and medium tactical truck committee rescheduled a meeting to revise the agenda and thus did not meet during the reporting period.

The critical quartz crystal committee, sponsored by the Signal Corps, met during the last quarter and has scheduled a meeting for the coming quarter to discuss the quartz crystal mechanization program.

The Army Transportation Supply and Maintenance Command, presently responsible for supervision of the Army aircraft and maintenance committee, has indicated that, although the committee has served a useful purpose by isolating problem areas and promoting understanding of mutual problems, its continuance may no longer be necessary. That command is considering dissolution of this committee.

I believe the contributions of these integration committees to the national defense outweigh any anticompetitive effects they may have.

C. CONTRIBUTION OF TANKER CAPACITY AGREEMENT

This agreement continues to be inactive inasmuch as there has arisen no necessity for the Military Sea Transportation Service to obtain tanker charters other than through the normal channels. The disagreement between Government and industry as to the provisions of this agreement relative to the compensation for ship owners and charterers from whom the Military Sea Transportation would charter tankers appears to have been resolved. An amendment embodying language purportedly agreeable to both Government and industry has been recommended by the Secretary of Commerce to the Director of the Office of Defense Mobilization. The latter has forwarded to me for approval a request to be made of the participants in the plan asking their participation in the amended plan. The request is under study by my office.

There are, of course, no anticompetitive effects of this agreement so long as it engages in no meetings or other activities as at present.

D. USIA CLASSIFIED AGREEMENT

This agreement, details of which may not be disclosed for security reasons, continues to be actively utilized. The United States Information Agency considers this agreement to be essential. I concur in that opinion.

Respectfully submitted.

WILLIAM P. ROGERS,
Attorney General.

APPENDIX

TABLE 1.—*Machine tools, dollar value of United States production (shipments), for selected years, 1939–57*

[Thousand dollars]

Year	Total all types	Cutting types	Forming and shaping types
1939	$250,000	$200,000	[1] $50,000
1943	1,470,000	1,180,000	[1] 290,000
1947	501,000	306,000	[1] 195,000
1948	360,450	288,450	[1] 72,000
1949	311,150	249,150	[1] 62,000
1950	378,550	305,550	[1] 73,000
1951	788,250	632,250	[1] 156,000
1952	1,355,382	1,114,608	240,774
1953	1,386,198	1,138,141	248,057
1954	1,072,799	821,450	251,349
1955	840,828	633,794	207,034
1956	1,138,147	833,665	304,482
1957 (9 months)	899,258	639,834	259,424

[1] Estimated.

Source: U. S. Department of Commerce.

TABLE 2.—*Estimated shipments of machine tools; cutting types; by units and dollars, 1919–57*

[In thousands]

Year	Shipments		Year	Shipments	
	Units	Dollars		Units	Dollars
1919	99.0	$161,000	1939	51.5	$200,000
1920	79.0	151,500	1940	110.0	440,000
1921	21.0	36,000	1941 [1]	185.0	775,000
1922	28.5	43,300	1942 [1]	307.0	1,320,000
1923	36.0	79,300	1943 [1]	266.0	1,180,000
1924	25.0	69,600	1944 [1]	136.0	497,000
1925	31.0	86,700	1945 [1]	103.0	423,700
1926	36.5	105,000	1946	75.0	334,800
1927	28.0	87,000	1947	60.0	306,000
1928	36.0	128,000	1948	50.0	288,450
1929	50.0	185,000	1949	34.5	249,150
1930	23.5	96,000	1950	41.5	305,550
1931	12.0	51,000	1951	70.8	632,250
1932	5.5	22,000	1952	96.8	[2] 1,114,608
1933	6.0	25,000	1953	91.5	[2] 1,138,141
1934	13.5	50,000	1954	58.5	[2] 821,450
1935	23.0	85,000	1955	([3])	[2] 633,794
1936	40.0	133,000	1956	([3])	[2] 833,665
1937	55.0	195,000	1957 (9 months)	([3])	[2] 639,834
1938	34.0	145,000			

[1] Estimates by War Production Board.
[2] B. D. S. A., U. S. Department of Commerce.
[3] Not available.

Source: National Machine Tool Builders Association.

TABLE 3.—*Machine tools, dollar value of United States exports (shipments) for selected years, 1939–57*

[In thousands]

Year	Total, all types	Cutting types	Forming and shaping types
1939	$100,352	$79,766	$20,586
1943	285,968	237,150	48,818
1947	136,603	105,328	31,275
1948	89,780	62,806	26,974
1949	104,963	72,621	32,342
1950	99,632	70,068	29,564
1951	103,459	72,958	30,501
1952	157,999	130,107	27,892
1953	152,461	125,199	27,262
1954	109,182	86,868	22,314
1955	125,755	87,006	38,749
1956	142,707	99,009	43,698
1957 (6 months)	94,775	61,475	33,300

Source: U. S. Department of Commerce.

TABLE 4.—*Machine tools, dollar value of imports for selected years, 1939–57*

[In thousands]

Year	Total, all types	Cutting types	Forming and shaping types
1939	$663	$320	$343
1943	2,382	2,051	331
1947	929	563	366
1948	1,826	971	855
1949	1,598	668	930
1950	2,291	2,235	56
1951	13,703	13,487	216
1952	49,868	49,637	231
1953	37,364	37,081	283
1954	22,307	22,048	259
1955	16,178	12,050	4,128
1956	24,571	19,225	5,346
1957 (6 months)	19,623	14,717	4,906

Source: U. S. Department of Commerce.

TABLE 5.—*Inventory of installed machine tools, by industries, 1949 and 1953*

[Number of units]

Industry	Total machine tools		Cutting-type tools		Forming and shaping-type tools	
	1949	1953	1949	1953	1949	1953
Total, machine tools	2,233,422	2,474,310	1,762,165	1,941,612	471,257	532,698
Agricultural machinery	59,121	87,471	48,498	70,372	10,623	17,099
Construction, mining, oil well	40,610	50,803	34,983	44,762	5,627	6,041
Metalworking machinery	154,520	169,172	147,327	161,033	7,193	8,139
Special-industry machinery	150,405	134,642	136,412	121,524	13,993	13,118
General industrial equipment	112,143	116,918	99,441	102,175	12,702	14,743
Office and store machines	56,345	50,461	45,645	41,112	10,700	9,349
Domestic and service equipment	68,508	74,558	48,151	52,724	20,357	21,834
Electrical equipment	214,780	260,405	161,914	190,124	52,866	70,281
Miscellaneous machine parts, jobbing	113,937	130,703	100,847	118,874	13,090	11,829
Motor vehicles and parts	180,977	220,473	138,595	171,156	42,382	49,317
Complete aircraft	62,724	56,205	54,711	41,673	8,013	14,532
Aircraft engines, propellers, and parts	(1)	66,326	(1)	60,323	(1)	6,003
Railroad equipment	20,704	23,232	16,075	18,744	4,629	4,488
Fabricated metal products	572,263	602,386	375,717	385,183	196,546	217,203
Shipbuilding, ordnance, miscellaneous	290,414	305,454	240,713	259,465	49,701	45,989
Precision mechanisms	135,971	125,101	113,136	102,368	22,835	22,733

[1] Separate figures not available. Aircraft engines, propellers, and parts included with complete aircraft.

Source: McGraw-Hill Census of Manufacturing Plants.

TABLE 6.—*Inventory of installed machine tools, by industries, 1949 and 1953*

[Percentage of total]

Industry	Total machine tools		Cutting-type tools		Forming and shaping-type tools	
	1949	1953	1949	1953	1949	1953
Total, machine tools	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural machinery	2.7	3.5	2.8	3.6	2.3	3.2
Construction, mining, oil well	1.8	2.1	2.0	2.3	1.2	1.1
Metal-working machinery	6.9	6.8	8.4	8.3	1.5	1.5
Special-industry machinery	6.8	5.4	7.7	6.3	3.0	2.5
General industrial equipment	5.0	4.7	5.6	5.3	2.7	2.8
Office and store machines	2.5	2.0	2.6	2.1	2.3	1.8
Domestic and service equipment	3.1	3.0	2.7	2.7	4.3	4.1
Electrical equipment	9.6	10.5	9.2	9.8	11.2	13.2
Miscellaneous machine parts, jobbing	5.1	5.3	5.7	6.1	2.8	2.2
Motor vehicles and parts	8.1	8.9	7.9	8.8	9.0	9.3
Complete aircraft	2.8	2.3	3.1	2.1	1.7	2.7
Aircraft engines, propellers, and parts	(1)	2.7	(1)	3.1	(1)	1.1
Railroad equipment	.9	.9	.9	1.0	1.0	.8
Fabricated metal products	25.6	24.4	21.3	19.8	41.7	40.8
Shipbuilding, ordnance, miscellaneous	13.0	12.4	13.7	13.4	10.5	8.6
Precision mechanisms	6.1	5.1	6.4	5.3	4.8	4.3

[1] Separate figures not available. Aircraft engines, propellers, and parts included with complete aircraft.

TABLE 7.—*Index of metalworking machinery [1] prices, 1947–57*

[1947–49=100.0 percent]

Year	Yearly average	March	June	September	December
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
1947	92.1	88.7	91.8	93.7	97.0
1948	101.3	99.1	99.5	104.0	105.0
1949	106.6	106.7	106.7	106.4	106.4
1950	113.7	108.1	109.8	117.2	126.8
1951	129.5	128.3	128.3	129.3	134.1
1952	136.0	136.0	136.1	136.3	136.4
1953	138.4	136.6	138.7	139.7	139.7
1954	140.0	140.1	139.9	140.2	140.1
1955	146.8	143.2	147.1	149.4	152.6
1956	165.0	158.8	163.7	171.0	172.4
1957	[2] 176.0	174.1	175.0	177.9	178.7

[1] Relative importance of machine tools is in excess of 80 percent.
[2] Preliminary.

Source: Bureau of Labor Statistics, U. S. Department of Labor.

TABLE 8.—*Machine tools, dollar value of United States production (shipments) cutting types, by standard commodity classification, 1954–57 (9 months)*

Classification	1954	1955	1956	1957 (9 months)
	Thousands	*Thousands*	*Thousands*	*Thousands*
Total cutting types	$821,450	$633,794	$883,665	$639,834
3411 Boring machines	118,289	86,179	112,305	83,953
3412 Broaching machines	16,429	16,510	19,153	15,052
3413 Drilling machines	124,039	89,633	76,181	40,662
3414 Gear cutting and finishing machines	51,751	42,249	55,506	27,857
3415 Grinding machines	112,539	98,043	137,085	97,738
3416 Lathes	220,970	155,922	220,862	156,691
3417 Milling machines	115,824	95,821	115,094	107,521
3418 Planers	15,608	8,292	6,913	6,816
3419 Miscellaneous cutting tools	46,001	41,145	90,566	103,544
	Percent	*Percent*	*Percent*	*Percent*
Total cutting types	100.0	100.0	100.0	100.0
3411 Boring machines	14.4	13.6	13.5	13.1
3412 Broaching machines	2.0	2.6	2.3	2.4
3413 Drilling machines	15.1	14.1	9.1	6.4
3414 Gear cutting and finishing machines	6.3	6.7	6.7	4.4
3415 Grinding machines	13.7	15.5	16.4	15.3
3416 Lathes	26.9	24.6	26.5	24.4
3417 Milling machines	14.1	15.1	13.8	16.8
3418 Planers	1.9	1.3	.8	1.1
3419 Miscellaneous cutting tools	5.6	6.5	10.9	16.1

Source: U. S. Department of Commerce.

TABLE 9.—*Machine tool's dollar value of United States production (shipments), forming and shaping types, by standard commodity classification, 1954–57 (9 months)*

Classification	1954	1955	1956	1957 (9 months)
	Thousands	*Thousands*	*Thousands*	*Thousands*
Forming and shaping types	$251,349	$207,034	$304,482	$259,424
3441 Bending and forming machines	21,365	23,518	30,174	25,047
3442 Presses, hydraulic and pneumatic	40,719	33,116	25,045	76,316
3443 Presses, mechanical—power driven	142,766	108,853	195,243	116,528
3444 Presses, manual	754	320	664	390
3445 Punching and shearing machines	16,086	18,333	25,776	19,782
3446 Forging machinery and hammers	14,578	9,583	10,814	8,710
3447 Wire and ribbon forming machines	2,513	3,011	2,932	1,995
3448 Riveting machines	3,268	3,106	3,916	2,403
3449 Miscellaneous secondary metal forming and cutting machines	9,300	7,194	9,918	8,253
	Percent	*Percent*	*Percent*	*Percent*
Forming and shaping types	100.0	100.0	100.0	100.0
3441 Bending and forming machines	8.5	11.3	9.9	9.6
3442 Presses, hydraulic and pneumatic	16.2	16.0	8.2	29.4
3443 Presses, mechanical—power driven	56.8	52.5	64.1	44.9
3444 Presses, manual	.3	.2	.2	.2
3445 Punching and shearing machines	6.4	8.9	8.4	7.6
3446 Forging machinery and hammers	5.8	4.6	3.6	3.4
3447 Wire and ribbon forming machines	1.0	1.5	1.0	.8
3448 Riveting machines	1.3	1.5	1.3	.9
3449 Miscellaneous secondary metal forming and cutting machines	3.7	3.5	3.3	3.2

Source: U. S. Department of Commerce.

TABLE 10.—*Korean machine tool pool contracts as of Dec. 31, 1952*

Contractor	Pool orders (as amended)	
	Number of machines	Value
Abrasive Machine Tool Co	515	$1,750,625.00
American Broach & Machine Co	190	5,750,936.00
Avey Drilling Machine Co	2,566	2,977,051.00
Baker Bros. Inc	596	4,540,781.60
Bardons & Oliver, Inc	69	524,698.00
Barnes Drill Co	303	4,406,600.00
W. F. & John Barnes Co	899	3,580,326.00
Baush Machine Tool Co	205	1,834,059.00
Besley-Wells Corp. (Charles H. Besley & Co.)	210	1,887,067.00
The Blanchard Machine Co	555	5,734,900.00
E. W. Bliss Co	4	365,960.00
J. G. Blount Co	112	173,814.00
The Bodine Corp	30	300,900.00
The Boye & Emmes Machine Tool Co	163	1,973,551.00
Bradford Machine Tool Co	215	1,269,000.00
Bridgeport Safety Emery Wheel Co., Inc	14	328,699.00
Brown & Sharp Manufacturing Co	5,912	42,768,138.00
Bryant Chucking Grinder Co	953	20,078,483.00
The Bullard Co	1,616	76,857,320.00
Burleigh & Stocker Machine Tool Co	57	1,853,250.00
The Carlton Machine Tool Co	812	12,134,481.00
Chambersburg Engineering Co	40	918,725.00
Cincinnati Bickford Tool Co	1,531	18,555,648.00
Cincinnati Gilbert Tool Co	595	7,923,744.00
Cincinnati Lathe & Tool Co	2,130	5,747,193.00
Cincinnati Milling & Grinding Machine Co	11,019	180,969,625.00
Cincinnati Shaper Co	1,020	12,271,523.00
Clearing Machine Corp	5	553,255.00
Cleermen Machine Tool Co	287	2,218,630.00
The Cleveland Automatic Machine Co	162	3,505,400.00
Cleveland Hobbing Machine Co	215	3,392,748.95
Cleveland Tapping Machine Co	82	244,235.00
Colonial Broach Co	231	3,237,484.69
Cone Automatic Machine Co., Inc	685	16,996,046.00
Crane Packing Co	54	494,954.00
The Cross Co	595	5,154,903.00
The Dennison Engineering Co	1,010	2,761,451.00
De Vlieg Machine Co	181	7,330,572.00
DeWalt, Inc	113	353,250.00
Diversified Metal Products Co	48	250,320.00
The Do All Co	915	2,837,823.50
The Downington Manufacturing Co	109	892,340.00
Bradley-Edlund Corp. (formerly Edlund Machinery Co.)	664	1,631,880.00
Fellows Gear Shaper Co	1,121	13,957,061.00
Ferracute Machine Co	36	380,024.00
Fosdick Machine Tool Co	1,045	8,248,350.00
Gallmeyer & Livingston Co	848	4,597,700.00
Gardner Machine Co	487	4,345,718.00
Gear Grinding Machine Co	97	3,004,460.00
Gemco Shaper Co. (formerly General Engineering & Manufacturing Co.)	25	158,775.00
General Riveters, Inc	103	1,955,249.00
Giddings & Lewis Machine Tool Co	1,521	93,843,155.00
Gisholt Machine Co	2,512	55,563,120.00
George Gorton Machine Co	1,824	8,074,699.00
Gould & Eberhardt, Inc	681	7,341,890.00
Greaves Machine Tool Co	86	485,614.00
Greenlee Bros. & Co	60	1,219,240.00
Hanson Whitney, division of Whitney Chain Co	102	1,145,460.00
Heald Machine Co	1,440	33,585,000.00
The Hendy Machine Co., Inc	742	5,835,401.00
Hufford Machine Works, Inc	51	3,308,161.00
Illinois Tool Works	597	2,194,920.00
Interstate Manufacturing Co	108	736,991.00
Jones & Lemson Machine Co	3,494	44,977,636.00
Kaukauna Machine Corp	124	4,645,032.00
Kearney & Trecker Corp	5,025	85,383,019.00
Kent-Owens Machine Co	501	2,264,533.00
W. B. Knight Machinery Co	41	460,900.00
The La Pointe Machine Tool Co	898	15,379,612.00
Landis Tool Co	1,422	36,163,574.00
The R. K. LeBlond Machine Tool Co	1,614	21,068,797.00
Lees-Bradner Co	181	2,573,217.00
Lehmann Machine Co	179	4,291,626.00
Lipe-Rollway Corp	150	450,600.00
The Lodge & Shipley Co	1,179	22,657,393.00
The Mattison Machine Works	350	7,942,690.00
Michigan Tool Co	193	2,695,170.00
Monarch Machine Tool Co	3,146	37,285,637.00
Moore Special Tool Co., Inc	45	394,500.00
Morey Machine Co	586	5,656,699.00

TABLE 10.—*Korean machine tool pool contracts as of Dec. 31, 1952*—Continued

Contractor	Pool orders (as amended)	
	Number of machines	Value
Morris Machine Tool Co	226	$1,911,493.00
Motch & Merryweather Machine Co	337	7,187,835.00
The National Acme Co	1,268	28,768,062.00
National Broach & Machine Co	179	2,328,700.00
The New Britain Machine Co. (Lucas Machine division)	355	14,454,935.00
The New Britain Machine Co. (New Britain-Gridley Machine division)	972	24,075,939.00
Niles-Bement Pond Co. (Pratt & Whitney division)	3,709	64,519,095.00
The Niles Tool Works (division of Lima-Hamilton Corp.)	250	11,868,075.00
Norton Co	3,124	45,333,847.00
Onsrud Machine Works, Inc	236	6,792,107.00
The Oster Manufacturing Co	125	476,875.00
Overarms Industries, Inc	13	293,410.00
Plan-O-Mill Corp	178	2,540,970.00
The Portage Machine Co	30	967,680.00
Reed-Prentice Corp	716	9,162,612.00
Rhenberg-Jacobson Manufacturing Co	21	594,500.00
Reid Bros., Inc	958	3,634,776.00
Reliance Machine & Tool division of Guide Instrument & Machine, Inc	36	1,065,492.00
Rivett Lathe & Grinder, Inc	403	1,666,150.00
Rockford Machine Tool Co	675	10,640,798.00
Rogers Machine Works	155	1,492,650.00
Row Bottom Machine Co	25	227,975.00
The Sheffield Corp	309	3,944,300.00
The Sheldon Machine Co., Inc	716	941,100.00
The Sidney Machine Tool Co	190	2,513,010.00
South Bend Lathe Works	4,600	6,879,100.00
Springfield Machine Tool Co	420	4,804,925.00
Sundstran Machine Tool Co	1,227	19,823,535.00
The Taft Pierce Manufacturing Co	340	945,500.00
The Thompson Grinder Co	743	7,847,135.00
Van Norman Co	1,854	16,574,256.00
The Wade Tool Co	87	295,940.00
Wickes Bros. (division of Wickes Corp.)	58	2,894,317.00
Zagar Tool, Inc	85	712,000.00
Total	94,921	1,321,783,107.74

Source: General Services Administration.

TABLE 11.—*Cost to GSA of Korean pool order program: Machines tendered and unsold items, Dec. 13, 1957*

Contractor	Tendered to GSA	Remaining unsold
Baker Bros., Inc	$510,367.11	$43,512.96
Baldwin-Lima-Hamilton (Niles)	1,086,194.11	859,484.11
J. G. Blount Co	11,061.60	11,061.60
The Boye & Emmes Machine Tool Co	440,031.55	360,112.21
Bradford Machine Tool Co	350,670.00	281,211.51
The Bullard Co	203,689.20	0
The Cleveland Automatic Machine Co	69,770.25	37,517.70
DeWalt, Inc	151,593.75	61,875.00
General Riveters, Inc	203,592.74	203,592.74
Giddings & Lewis Machine Tool Co	1,709,694.61	0
The Hendy Machine Co., Inc	17,384.40	0
Hufford Machine Works, Inc	496,006.48	0
Interstate Manufacturing Co	44,673.75	44,673.75
Kaukauna Machine Corp	308,054.96	308,054.96
Kent-Owens Machine Co	35,532.75	0
The R. K. LeBlond Machine Tool Co	36,356.10	36,356.10
Lees-Bradner Co	241,371.90	224,131.04
Morey Machinery Co	352,962.01	352,962.01
Motch & Merryweather Machine Co	300,370.92	300,370.92
Niles-Bement Pond Co. (Pratt & Whitney division)	2,512,960.69	1,192,399.71
Norton Co	106,680.74	102,869.24
Plan-O-Mill Corp	200,936.74	118,752.98
Reid Bros., Inc	326,182.04	21,037.50
The Sheffield Corp	169,548.30	104,508.27
Wickes Bros. (division of Wickes Corp.)	443,370.65	443,370.65
Zagar Tool, Inc	48,633.76	48,633.65
Total	10,437,691.11	5,156,488.72

Source: General Services Administration.

TABLE 12.—*Korean pool order program advances as of Dec. 12, 1957*

Contractor	Advance	Repayment	Balance
Baker Brothers, Inc.	$1,347,176.50	$1,347,176.50	
Baush Machine Tool Co.	550,217.70	550,217.70	
Bodine Corp.	90,270.00	90,270.00	
Bridgeport Safety Emery Wheel Co.	98,609.70	2,220.64	[1] $96,389.06
Cleereman Machine Tool Co.	332,794.00	332,794.00	
The Cross Co.	2,213,500.00	2,213,500.00	
Downingtown Mfg Co.	307,500.00	307,500.00	
Edlund Machinery Co.	160,000.00	160,000.00	
Ferracute Machine Co.	100,000.00	100,000.00	
General Riveters, Inc.	550,175.25	550,175.25	
Giddings & Lewis Machine Tool Co.	23,500,000.00	23,500,000.00	
Hendey Machine Co., Inc.	1,750,620.30	1,750,620.30	
Interstate Manufacturing Co.	160,000.00	160,000.00	
Kaukauna Machine Corp.	1,268,409.70	1,268,409.70	
Novo Engine Co.			
Lehmann Machine Co., division	1,000,838.10	1,000,838.10	
Morey Machinery Co., Inc.	1,497,996.30	1,497,996.30	
Motch & Merryweather Machine Co.	1,000,000.00	1,000,000.00	
New Britain-Gridley division			
New Britain-Lucas division	8,490,840.60	8,490,840.60	
Onsrud Machine Works	1,595,140.85	1,595,140.85	
Overarms Industries, Inc.	88,000.00	18,303.00	[2]
Plan-O-Mill Corp.	727,918.80	727,918.80	
Rehnberg-Jacobson Manufacturing Co.	50,000.00	50,000.00	
Reliance Machine Tool Co.	363,694.00	363,694.00	
Rogers Machine Works.	300,000.00	300,000.00	
Springfield Machine Tool Co.	750,000.00	750,000.00	
Thompson Grinder Co.	600,000.00	600,000.00	
Van Norman Co.	4,668,000.00	4,668,000.00	
Zagar Tool, Inc.	220,000.00	220,000.00	
Total	53,781,701.80	53,615,615.74	96,389.06

[1] Presently in litigation for collection.
[2] Balance of $69,697 written off as uncollectible.

Source: General Services Administration.

TABLE 13.—*Status of loans guaranteed by GSA as of Dec. 12, 1957*

Name of borrower	Maximum amount	Date authorized	Percent guaranteed	Amount outstanding	GSA liability
George Gorton Machine Co., Racine, Wis.	$1,150,000	Oct. 24, 1951	85	Guaranty terminated September 1953.	
The Bullard Co., Bridgeport, Conn.	10,000,000	Dec. 20, 1951	80	Paid in full March 1953.	
Cleveland Tapping Machine Co., Canton, Ohio.	300,000	Dec. 26, 1951	70	Guaranty terminated December 1953.	
The Sheffield Corp., Dayton, Ohio.	5,000,000	Jan. 31, 1952	70	Paid in full August 1954.	
W. F. & John Barnes Co., Rockford, Ill.	1,000,000	Jan. 11, 1952	90	Guaranty terminated December 1953.	
La Pointe Machine Tool Co., Hudson, Mass.	2,500,000	Jan. 17, 1952	80	Paid in full November 1953.	
The Cross Co., Detroit, Mich.	230,000	Feb. 1, 1952	95	Paid in full March 1954.	
Fosdick Machine Tool Co., Cincinnati, Ohio.	1,500,000	Feb. 15, 1952	80	Guaranty terminated December 1953.	
E. Horton & Son Co., Windsor Locks, Conn.	200,000	Mar. 13, 1952	90	Paid in full August 1953.	
Ekstrom, Carlson & Co., Rockford, Ill.	350,000	Apr. 4, 1952	90	Guaranty dropped June 1954.	
Kaukauna Machine Corp., Kaukauna, Wis.	300,000	May 8, 1952	70	Guaranty dropped September 1955.	
Plant 100 Corp., Kearney & Trecker, Milwaukee, Wis.	5,232,000	Sept. 9, 1952	100	$2,509,200	$2,509,200
Onsrud Machine Works, Inc., Chicago, Ill.	1,150,000	June 18, 1953	85	Paid in full December 1957.	
South Water Machinery Co., Rockford, Ill., (W. F. & John Barnes Co.).	2,300,000	Oct. 23, 1952	100	$850,359	$850,359
Total	31,212,000			$3,359,559	$3,359,559

Source: General Services Administration.

TABLE 14.—*The 24 largest machine-tool builders (cutting type) in order of rank* [1]

The Cincinnati Milling Machine Co., Cincinnati, Ohio
The Bullard Co., Bridgeport, Conn.
Giddings & Lewis Machine Tool Co., Fond du Lac, Wis.
Kearney & Trecker Corp., Milwaukee, Wis.
The Warner & Swasey Co., Cleveland, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
W. F. & John Barnes Co., Rockford, Ill.
The R. K. LeBlond Machine Co., Cincinnati, Ohio
The National Acme Co., Cleveland, Ohio
Gleason Works, Rochester, N. Y.
Brown & Sharpe Manufacturing Co., Providence, R. I.
Ex-Cell-O Corp., Detroit, Mich.
Gisholt Machine Co., Madison, Wis.
Landis Tool Co., Waynesboro, Pa.
Pratt & Whitney Co., Inc., West Hartford, Conn.
The Foote-Burt Co., Cleveland, Ohio
The Monarch Machine Tool Co., Sidney, Ohio
The Cross Co., Detroit, Mich.
Jones & Lamson Machine Co., Springfield, Vt.
Norton Co., Worcester, Mass.
Snyder Tool & Engineering Co., Detroit, Mich.
The New Britain Machine Co., New Britain, Conn.
National Automatic Tool Co., Inc., Richmond, Ind.
The American Tool Works Co., Cincinnati, Ohio

[1] Based on shipments in first 9 months of 1957.

Source: Business and Defense Services Administration.

TABLE 15.—*The 20 largest machine-tool builders (forming and shaping type) in order of rank* [1]

Danly Machine Specialties, Inc., Chicago, Ill.
U. S. Industries, Inc., New York, N. Y.
E. W. Bliss Co., Canton, Ohio
Verson Allsteel Press Co., Chicago, Ill.
Baldwin-Lima-Hamilton Corp., Hamilton, Ohio
The Cincinnati Shaper Co., Cincinnati, Ohio
Waterbury Farrell Foundry & Machine Co., Waterbury, Conn.
The Minster Machine Co., Minster, Ohio
Niagara Machine & Tool Works, Buffalo, N. Y.
Dreis & Krump Manufacturing Co., Chicago, Ill.
The Hydraulic Press Manufacturing Co., Mount Gilead, Ohio (a division of Koehring Co.)
Farnham division (of the Wiesner-Rapp Co., Inc.), Buffalo, N. Y.
Lake Erie Engineering Corp., Buffalo, N. Y.
Cleveland Crane & Engineering Co., Wickliffe, Ohio
The Federal Machine & Welder Co., Warren, Ohio
The Ajax Manufacturing Co., Cleveland, Ohio
The Cyril Bath Co., Solon, Ohio
Stamco, Inc., New Bremen, Ohio
Wysong & Miles Co., Greensboro, N. C.
Bertsch & Co., Cambridge City, Ind.

[1] Based on shipments in first 9 months of 1957.

Source: Business and Defense Services Administration.

TABLE 16.—*Toolbuilders facilities expansion contracts as of June 30, 1955*

Lessee	Lease orders (as amended)		Machines acquired		Amount reserved for removal and placing in storage
	Number of machines	Value	Number of machines	Value	
Acar Broach Co	22	$150,000.00	22	$125,672.77	$24,327.23
Acorn Tool & Manufacturing, Inc	8	166,000.00	8	145,975.05	20,024.95
American Broach & Machine Co	14	190,000.00	14	172,088.68	17,911.32
American Type Founders, Inc	1	41,000.00	1	36,177.89	4,822.11
Appleton Machine Co	3	198,000.00	3	172,196.95	25,803.05
Avey Drilling Machine Co	3	172,000.00	3	156,383.63	15,616.37
Baker Brothers, Inc	3	265,000.00	3	246,620.74	18,379.26
Banks & White Co	1	2,500.00	1	2,020.00	480.00
Rice Barton Corp	6	124,000.00	6	111,143.40	12,856.60
Baush Mahine Tool Co	3	70,000.00	3	60,262.00	9,738.00
Beaver Machine & Tool Co., Inc	1	12,000.00	1	10,461.00	1,539.00
Bock Machine Co., Inc	4	19,000.00	4	16,839.39	2,160.61
Boye & Emmes Machine Tool Co	9	177,000.00	9	159,608.49	17,391.51
Bryant Chucking Grinder Co	22	345,099.00	22	332,728.36	12,370.64
Bullard Co	34	1,660,000.00	34	1,621,993.04	38,006.96
Cadillac Gage Co	47	410,000.00	47	370,343.11	39,656.89
Canton Tool Manufacturing Co	8	180,000.00	8	161,254.95	18,745.05
Cleveland Hobbing Machine Co	18	590,000.00	18	524,533.26	65,466.74
Colonial Broach Co	153	1,026,000.00	153	930,173.97	95,826.03
Columbus Production Manufacturing Co	8	179,700.00	8	160,647.70	19,052.30
Cone Automatic Machine Co., Inc	23	400,000.00	23	347,017.44	52,982.56
Crawley Book Machinery Co	6	98,000.00	6	86,650.29	11,349.71
The Cross Co	655	1,169,950.00	655	1,085,946.67	84,003.33
Curt Joa Corp	2	120,000.00	2	93,393.49	26,606.51
The Cushman Chuck Co	20	365,000.00	20	325,261.82	39,738.18
The J. H. Day Co., Inc	4	175,000.00	4	159,038.37	15,961.63
Denison Engineering Co	18	268,000.00	18	241,807.97	26,192.03
Detroit Broach Co., Inc	381	850,000.00	381	675,434.85	174,565.15
Detroit Jig Grinding Co	16	222,000.00	16	181,981.73	40,018.27
Dexter Folder Co	2	41,000.00	2	35,295.62	5,704.38
Downingtown Manufacturing Co	3	145,000.00	3	132,145.44	12,854.56
Draper Corp	0	1,000.00	0	0	1,000.00
East Chicago Machine Tool Corp	1	70,000.00	1	65,556.50	5,443.50
Economy Tool & Die Co	2	6,500.00	2	5,438.83	1,061.17
Fayscott Corp	27	695,000.00	27	633,064.03	61,935.97
Fayscott Corp. (subcontractor to Giddings & Lewis)	0	180,000.00	0	0	180,000.00
Fosdick Machine Tool Co	9	325,000.00	9	300,296.03	24,703.97
Franklin Manufacturing Co., Inc	7	31,000.00	7	26,889.16	4,110.84
The R. H. Freitag Manufacturing Co	26	1,049,000.00	26	940,401.51	108,598.49
French Oil Mill Machinery Co	2	110,000.00	2	107,812.49	2,187.51
Gallmeyer & Livingston Co., Inc	2	70,000.00	2	63,872.52	6,127.48
General Motors Corp	19	151,244.02	19	151,244.02	0
Giddings & Lewis Machine Tool Co	0	4,932.00	0	4,932.00	0
Do	11	811,000.00	11	810,198.87	801.13
George Gorton Machine Co	5	200,000.00	5	178,669.43	21,330.57
Goss Printing Press Co., Inc	2	222,605.04	2	222,605.04	0
Do	21	360,000.00	21	307,104.00	52,896.00
Gould & Eberhardt, Inc	17	605,000.00	17	544,269.19	60,730.81
Great Eastern Manufacturing Co	1	1,901.00	1	1,901.00	0
Hardinge Bros., Inc	13	180,000.00	13	151,873.07	28,126.93
Heidrich Tool & Die Corp	6	375,000.00	6	337,241.82	37,758.18
The E. Horton & Son Co	15	272,000.00	15	236,312.89	35,687.11
Hufford Machine Works, Inc	8	286,000.00	8	270,085.48	15,914.52
Hydraulic Press Manufacturing Co	16	550,000.00	16	485,869.95	64,130.05
Illinois Tool Works	10	97,000.00	10	84,081.03	12,918.97
Iron Fireman Manufacturing Co	12	265,000.00	12	238,166.93	26,833.07
R. L. Jacobs Machine Works	3	105,000.00	3	101,765.42	3,234.58
The Jacobs Manufacturing Co	25	255,000.00	25	226,380.97	28,619.03
I. O. Johansson Co., Inc	2	22,000.00	2	21,421.95	578.05
Kaukauna Machine Corp	11	300,000.00	11	278,537.88	21,462.12
Kline Manufacturing Co	4	125,000.00	4	95,788.84	29,211.16
W. B. Knight Machinery Co	5	110,000.00	5	108,140.53	1,859.47
LaPointe Machine Tool Co	68	1,485,000.00	68	1,197,434.33	287,565.67
Lehmann Machine Co	6	244,000.00	6	221,158.23	22,841.77
Lennox Furnace Co	2	60,000.00	2	48,861.00	11,139.00
Lyons Tool & Die Co	2	5,000.00	2	4,842.81	157.19
McPherson Broach & Machine Co., Inc	21	182,000.00	21	152,042.30	29,957.70
Machine Products Co	7	40,000.00	7	36,313.48	3,686.52
Medart Co	3	250,000.00	3	219,718.37	30,281.63
Michigan Broach Co	16	200,000.00	16	149,715.12	50,284.88
Michigan Spline Gage Co	5	50,000.00	5	25,592.18	24,407.82
Michigan Tool Co	13	410,000.00	13	314,617.55	95,382.45
Miehle Printing Press & Manufacturing Co	46	425,000.00	46	382,213.61	42,786.39
Model Broach Co	11	80,000.00	11	59,415.00	20,585.00

TABLE 16.—*Toolbuilders facilities expansion contracts as of June 30, 1955*—Con.

Lessee	Lease orders (as amended)		Machines acquired		Amount reserved for removal and placing in storage
	Number of machines	Value	Number of machines	Value	
Monarch Machine Tool Co	91	$2,166,300.00	91	$1,968,039.56	$198,260.44
Morris Machine Tool Co	8	260,000.00	8	233,425.25	26,574.75
Morton Manufacturing Co	7	245,000.00	7	219,602.27	25,397.73
Motch & Merryweather Machine Co	32	138,000.00	32	113,202.44	24,797.56
J. F. Mulkey Co	28	665,000.00	28	587,480.69	77,519.31
National Gage Co., Inc	12	80,000.00	12	70,288.92	9,711.08
Nebel Machine Tool Co	1	150,000.00	1	132,805.23	17,194.77
New Britain Machine Co.:					
New Britain-Gridley Machine Co. division	16	360,000.00	16	290,708.00	69,292.00
Lucas Machine division	7	85,000.00	7	74,090.48	10,909.52
Newman Machine Co., Inc	9	185,000.00	9	169,721.54	15,278.46
Niles-Bement-Pond Co	111	1,824,000.00	111	1,611,354.48	212,645.52
Onsrud Machine Works, Inc	1	235,000.00	1	208,415.86	26,584.14
Baker Perkins, Inc	2	181,000.00	2	162,476.97	18,523.03
Pines Engineering Co., Inc	7	220,000.00	7	186,028.19	33,971.81
Pivot Punch & Die Corp	14	250,000.00	14	238,941.34	11,058.66
Plan-O-Mill Corp	4	70,000.00	4	52,851.91	17,148.09
Portage Machine Co	24	505,000.00	24	446,670.32	58,329.68
Porter-McLeod Machine Tool Co., Inc	1	70,000.00	1	21,835.78	48,164.22
Premier Mill Corp	7	170,000.00	7	152,927.86	17,072.14
Production Experts, Inc	4	357,000.00	4	311,762.71	45,237.29
Progressive Tool & Die Co	16	165,000.00	16	156,660.65	8,339.35
Pyramid Manufacturing Co	7	120,000.00	7	76,233.21	43,766.79
John Ramming Machine Co	11	265,000.00	11	246,533.48	18,466.52
Recknagel Machine Products, Inc	1	11,500.00	1	10,734.08	765.92
Reid Brothers Co., Inc	4	80,000.00	4	69,917.87	10,082.13
Reserve Machine & Design Co	1	58,000.00	1	50,545.30	7,454.70
Rivett Lathe & Grinder, Inc	5	98,000.00	5	87,203.16	10,796.84
Seneca Falls Machine Co	3	55,000.00	3	48,090.10	6,909.90
Sheffield Corp	75	700,000.00	75	618,647.61	81,352.39
Springfield Machine Tool Co	1	50,000.00	1	45,074.02	4,925.98
Steel Products Engineering Co	2	50,000.00	2	43,678.42	6,321.58
Sterling Hydro Products, Inc	9	128,000.00	9	92,134.86	35,865.14
Taylor-Wilson Manufacturing Co., Inc	1	50,000.00	1	40,382.00	9,618.00
Thompson Grinder Co	13	324,000.00	13	257,398.84	66,601.16
Union Manufacturing Co	1	30,000.00	1	27,691.45	2,308.55
United States Broach Co	10	125,000.00	10	92,949.56	32,050.44
Vermont Marble Co	13	315,000.00	13	264,674.11	50,325.89
Verson Allsteel Press Co., Inc	23	1,520,000.00	23	1,420,535.83	99,464.17
Viking Broach Co., Inc	33	140,000.00	33	121,658.23	18,341.77
Wade Tool Co	6	80,000.00	6	55,532.25	24,467.75
Wales Strippit Corp	20	275,000.00	20	250,177.47	24,822.53
Ward, Ashley F., Inc	4	90,000.00	4	71,540.10	18,459.90
Warner & Swasey Co	95	1,502,000.00	95	1,372,393.56	129,606.44
Wiedemann Machine Co	8	130,000.00	8	115,688.31	14,311.69
Willcox & Gibbs Sewing Machine Co	9	95,000.00	9	87,344.26	7,655.74
Yates-American Machine Co	0	0	0	0	0
Zagar Tool, Inc	1	35,000.00	1	31,148.85	3,851.15
1954 Baldwin-Lima-Hamilton Corp	0	180,000.00	0	0	180,000.00
Total	2,738	35,986,231.06	2,738	31,699,140.81	4,287,090.25

Source: General Services Administration.

TABLE 17.—*Tax amortization certificates granted expansion goal 123, machine tools*

Company	Tax amortization No.	Dollar amount in thousands			Percent	Date certified
		Applied for	Certified	Eligible		
Allen, Charles G., Co	12160	$157	$157	$110	70	Nov. 30, 1951
American Broach & Machine Co	14002	89	82	61	75	Jan. 5, 1952
Do	17140	40	40	30	75	Feb. 27, 1952
American Machine & Foundry Co	5143	566	553	387	70	Sept. 15, 1951
American Steel Foundries	5261	93	93	84	90	July 2, 1951
American Tool Works Co	11503	25	25	20	80	Nov. 9, 1951
Do	15245	39	39	31	80	Jan. 5, 1952
Do	15908	40	40	30	75	Jan. 19, 1952
Do	16708	95	95	76	80	Feb. 21, 1952
Appleton Machine Co	16558	100	100	65	65	June 12, 1952
Arter Grinding Machine Co	22549	12	12	8	70	Nov. 5, 1952
Do	26091	12	12	5	45	July 28, 1953
Ashlstrand Brothers, Inc	16079	23	20	13	65	Feb. 9, 1952
Avey Drilling Machine Co	160	348	348	261	75	Apr. 12, 1951
Baird Machine Co	26146	400	400	220	55	Aug. 5, 1953
Baldwin-Lima-Hamilton Corp	11391	222	222	144	65	Nov. 9, 1951
Do	11392	303	299	194	65	Do.
Do	15404	635	635	318	50	Jan. 28, 1953
Do	16869	172	172	112	65	Feb. 8, 1952
Do	24257	498	498	324	65	Mar. 27, 1953
Bardes Forge & Foundry Co	15303	180	129	84	65	Dec. 21, 1951
Bardons & Oliver, Inc	6828	78	78	66	85	Sept. 21, 1951
Do	16020	83	83	62	75	Jan. 19, 1952
Do	17294	15	15	10	65	July 23, 1952
Barnes Drill Co	12664	14	14	9	70	Nov. 14, 1951
Do	16189	350	350	245	70	Feb. 29, 1952
Do	17866	37	29	22	75	May 12, 1952
Do	20590	76	66	46	70	July 15, 1952
Do	26262	286	286	186	65	Oct. 7, 1953
Do	27224	500	500	225	45	Mar. 9, 1954
Baush Machine Tool Co	12683	20	20	16	80	Nov. 30, 1951
Joseph Behr & Sons, Inc	20076	400	400	180	45	Sept. 15, 1952
Bengtson, Inc	22613	77	72	43	60	Nov. 7, 1952
Besly, Charles H., Co	2994	659	659	527	80	May 29, 1951
Blanchard Machine Co	10430	515	389	311	80	Sept. 12, 1951
Boyer-Schultz Corp	13106	96	94	75	80	Dec. 3, 1951
Do	13107	35	35	25	70	Nov. 9, 1951
Do	13108	78	78	55	70	Do.
Do	19203	30	30	21	70	May 12, 1952
Do	19879	100	100	75	75	June 11, 1952
Do	24058	44	44	31	70	Feb. 19, 1953
Boye & Emmes Machine Tool Co	11789	58	16	13	80	Nov. 9, 1951
Breslin Laboratories	11575	33	33	27	82	Jan. 23, 1952
Bridgeport Machines Inc	5062	707	460	368	80	June 29, 1951
Brown & Sharpe Manufacturing Co	18271	782	782	547	70	May 12, 1952
Do	19366	269	260	169	65	July 11, 1952
Bryant Chucking Grinder Co	1309	38	38	32	85	Mar. 5, 1951
Do	14299	54	58	44	75	Jan. 14, 1952
Do	17189	63	63	44	70	July 23, 1952
Buhr Machine Tool Co	4358	194	186	149	80	July 27, 1951
Bullard Co	6831	894	894	670	75	Sept. 15, 1951
Do	12345	474	474	308	65	Nov. 30, 1951
Do	20773	600	600	240	40	Jan. 29, 1953
Do	24284	325	325	130	40	Mar. 13, 1953
Burg Tool Manufacturing Co	18081	198	198	158	80	May 12, 1952
Do	23969	145	145	72	50	Feb. 19, 1953
Cameron Machine Co	22588	446	421	232	55	Nov. 12, 1952
Carlton Machine Tool	5453	391	391	313	80	June 29, 1951
The Cincinnati Gear Co	1706	237	237	213	90	Mar. 7, 1951
Cincinnati Gilbert Machine Tool Co	12340	45	45	32	70	Nov. 23, 1951
Do	18217	35	35	24	70	May 12, 1952
Cincinnati Manufacturing Co	3671	111	111	88	79	Aug. 3, 1951
Cincinnati Metalcrafts, Inc	13377	117	117	94	80	Jan. 3, 1952
Do	17962	84	84	67	80	May 12, 1952
Cincinnati Milling Machine Co	1367	4,042	4,042	3,436	85	Feb. 26, 1952
Do	1368	3,286	3,286	2,629	80	Do.
Do	8043	33	33	23	70	Nov. 8, 1951
Do	24941	2,585	2,585	1,185	46	June 3, 1953
Do	24942	1,065	1,065	600	56	Do.
Cincinnati Shaper Co	15757	3,393	3,393	2,205	65	Dec. 14, 1951
Clearing Machine Corp	19069	286	286	186	65	Sept. 5, 1952
Cleeremen Machine Tool Co	12205	168	164	131	80	Nov. 23, 1951
Cleveland Hobbing Machine Co	1679	91	59	50	85	June 6, 1951
Do	7968	160	160	104	65	Nov. 9, 1951
Do	13661	79	79	56	71	May 8, 1952
Do	18916	41	41	29	70	May 12, 1952
Coast Centerless Grinding Co	579	66	48	43	90	Apr. 2, 1951
Cogsdill Twist Drill Co	4063	76	76	57	75	June 9, 1951
Columbus Production Manufacturing Co	2067	124	117	82	70	Feb. 26, 1951

TABLE 17.—*Tax amortization certificates granted expansion goal 123, machine tools*—Continued

Company	Tax amortization No.	Dollar amount in thousands			Percent	Date certified
		Applied for	Certified	Eligible		
Composite Forgings, Inc	12180	$584	$547	$356	65	Dec. 6, 1951
Cone Automatic Machine Co., Inc	5853	506	506	405	80	Sept. 15, 1951
Do	16966	62	62	44	71	Feb. 29, 1952
Consolidated Machine Tool Corp	9487	156	156	140	90	Sept. 19, 1951
Do	21735	65	65	45	70	Aug. 25, 1952
Continental Can Co., Inc	17026	163	163	106	65	Feb. 21, 1952
Continental Gin Co	18826	95	95	71	75	May 12, 1952
Do	26450	90	90	39	65	Sept. 22, 1953
Continental Machines Inc	63	262	262	223	85	Mar. 8, 1951
Do	8778	162	159	127	80	July 12, 1951
Do	18181	39	39	27	70	May 12, 1952
Do	25933	226	216	140	65	Sept. 16, 1953
Cook Manufacturing Co	24258	34	34	24	70	Mar. 27, 1953
Cottrell Sons Co., C. B	20264	386	386	251	65	Nov. 6, 1952
Crankshaft Machine Co	15641	73	73	58	80	Dec. 21, 1951
Crawley Book Machinery Co	18057	15	15	10	65	May 12, 1952
Do	18058	7	7	5	65	Do.
Cross Co	5966	72	72	54	75	Dec. 20, 1951
Do	9890	238	238	179	75	Nov. 9, 1951
Do	14388	1,059	406	305	75	Nov. 30, 1951
Do	15761	115	78	55	70	Jan. 18, 1952
Davenport Machine Tool Co., Inc	11935	189	189	123	65	Nov. 30, 1951
Davis & Thompson Co	7782	404	404	283	70	Jan. 30, 1951
Do	16290	820	820	533	63	Feb. 18, 1952
Day Co., Inc., J. H	10188	669	193	125	65	Jan. 5, 1953
Derbyshire, Inc., F. W	19964	10	10	8	80	June 11, 1952
The H. P. Deuscher Co	1562	34	34	26	75	Mar. 5, 1951
Devlieg Machine Co	10021	188	188	131	70	Dec. 7, 1951
Do	16584	306	306	214	70	Feb. 28, 1952
Dexter Folder Co	10790	9	9	7	80	Nov. 9, 1951
Dexter Mills, Inc	12862	21	21	18	85	Oct. 3, 1951
Doall Co	9035	50	50	33	65	Nov. 21, 1951
Doall Midwest Co	8478	48	43	19	45	Jan. 5, 1953
Doall Philadelphia Co	10024	42	35	16	45	Do.
Dover Stamping Co	599	4	4	3	75	Mar. 27, 1951
Douglas Tool Co	969	68	60	45	75	May 7, 1951
Do	12363	90	90	58	65	Feb. 11, 1952
Draper Corp	10637	210	210	158	75	Dec. 14, 1951
Eastern Machinery Co	80	250	250	188	75	July 13, 1951
The Enterprise Co	13697	43	43	32	75	Dec. 14, 1951
Ekstrom Carlson & Co	10013	244	244	171	70	Nov. 8, 1951
Ex-Cell-O Corp	4741	223	223	178	80	July 3, 1951
Do	17136	195	195	127	65	Feb. 26, 1952
Do	20501	100	88	57	65	July 10, 1952
Do	24061	153	107	70	65	June 5, 1953
Do	25736	301	298	194	65	July 3, 1953
Ex-Cel Tool Die & Engineering Co	16423	47	47	33	70	Feb. 25, 1952
Farrel-Birmingham Co., Inc	25406	125	110	44	40	June 16, 1953
Fay & Egan Co	23379	37	35	25	71	Jan. 19, 1953
Fayscott Corp	15974	200	200	130	65	Dec. 7, 1951
Fellows Gear Shaper Co	6389	327	327	261	80	Sept. 19, 1951
Do	11485	39	39	27	70	Nov. 9, 1951
Do	14333	159	159	111	70	Dec. 21, 1951
Do	16181	53	53	37	70	Feb. 27, 1952
Do	19272	47	47	33	70	May 12, 1952
Do	20574	39	39	26	67	July 28, 1952
Do	23411	106	106	69	65	Feb. 17, 1953
Do	24400	335	335	134	40	Apr. 6, 1953
Fitchburg Engineering Corp	23302	14	14	10	70	Jan. 16, 1953
Foote Burt Co	15985	21	16	11	70	Jan. 18, 1952
Do	17572	41	41	27	65	July 7, 1952
Do	24763	494	494	222	45	June 8, 1953
Fosdick Machine Tool Co	368	306	112	90	80	June 25, 1951
Do	21450	14	14	10	70	Aug. 20, 1952
Do	23072	70	70	32	45	Jan. 7, 1953
Do	26039	75	75	57	52	July 27, 1953
Frank Foundries Corp	3296	30	30	27	90	Aug. 3, 1951
Frauenthal, Inc., A. Harold	8393	113	101	66	65	Jan. 9, 1952
The French Oil Mill Machine Co	21542	115	115	57	50	Oct. 24, 1952
Fulton Iron Works Co	17597	82	82	62	75	May 12, 1952
Do	23801	16	16	11	70	Feb. 17, 1953
Gallmeyer Livingston Co	6490	187	186	130	70	Sept. 22, 1951
General Motors—Cleveland diesel division	1226	1,665	1,665	1,249	75	Mar. 15, 1951
General Motors—Detroit diesel division	1227	1,182	1,129	904	80	Mar. 5, 1951
Gibbons Machine Co., Inc	25715	20	20	9	45	June 30, 1953
Giddings-Lewis Machine Co	4333	592	578	462	80	Aug. 3, 1951
Do	4989	1,779	1,591	1,193	75	Sept. 8, 1951
Do	22416	98	98	64	65	Oct. 16, 1952
Do	26454	196	150	60	40	Oct. 27, 1953

TABLE 17.—*Tax amortization certificates granted expansion goal 123, machine tools*—Continued

Company	Tax amortization No.	Dollar amount in thousands			Percent	Date certified
		Applied for	Certified	Eligible		
Gilman Engineering Manufacturing Corp	2650	$36	$36	$23	65	Nov. 6, 1952
Gisholt Machine Co	1565	325	325	276	85	Apr. 18, 1951
Do	11693	279	265	199	75	Dec. 6, 1951
Do	15098	31	29	20	70	May 12, 1952
Do	18808	97	97	68	70	Do.
Gleason Works	11216	13,950	13,732	8,926	65	Nov. 9, 1951
The Gleason Works	4860	178	178	134	75	July 27, 1951
Gorton Machine Co	12258	154	150	120	80	Dec. 4, 1951
Do	19153	21	18	14	80	May 12, 1952
Goss Printing Press Co	16580	3,600	2,483	1,862	75	Feb. 6, 1952
Gray, G. A., Co	6719	50	17	14	85	Sept. 10, 1951
Do	16450	75	73	58	80	Feb. 8, 1952
Do	17766	69	64	48	75	May 12, 1952
Do	18127	81	81	61	75	Do.
Do	22941	15	15	10	70	Dec. 11, 1952
Greenfield Tap & Die Corp	15577	132	132	86	65	Nov. 30, 1951
Haines, Jack, Co	21676	60	60	42	70	Aug. 20, 1952
Do	25846	12	12	5	45	July 16, 1953
Hardinge Bros., Inc	2101	108	108	92	85	Mar. 28, 1951
Do	10106	122	60	45	75	Nov. 9, 1951
Do	17898	13	13	9	70	May 12, 1952
Hartford Special Machinery Co	23330	211	211	148	70	Feb. 16, 1953
Do	17366	139	139	104	75	Feb. 29, 1952
Do	21222	734	734	367	50	Sept. 24, 1952
Heald Machine Co	2224	1,512	1,512	1,134	75	Apr. 11, 1951
Henry Bros. Tool & Die Works	597	6	6	5	90	June 7, 1951
High Speed Hammer Co., Inc	4722	3	3	3	80	Aug. 15, 1951
Hoe, R. & Co., Inc	16088	219	219	164	75	Jan. 9, 1952
Do	25190	51	51	33	65	June 15, 1953
Hoern & Dilts, Inc	17640	35	35	24	70	Apr. 21, 1952
Hoffacker, C. O., Co	15839	10	7	5	75	Jan. 23, 1952
Do	18514	30	30	22	75	May 12, 1952
Hufford Machine Works	391	288	288	216	75	Feb. 26, 1951
Do	24046	45	45	20	45	Feb. 18, 1953
Illinois Tool Works	5256	1,144	1,177	941	80	June 22, 1951
Independent Lock Co	752	4	4	4	90	June 12, 1951
Index Machine & Tool Co	8083	42	35	23	65	Nov. 8, 1951
International Paper Box Machine Co	25025	234	234	164	70	June 15, 1953
Jennings Machine Corp	1020	56	56	45	80	Apr. 10, 1951
Johnson & Bassett, Inc	19206	14	14	11	80	May 12, 1952
Do	26264	8	8	5	65	Aug. 24, 1953
Jones & Lamson Machine Co	11227	94	88	66	75	Nov. 9, 1951
Do	16070	94	91	64	70	Jan. 10, 1952
Do	16812	1,418	1,418	922	65	May 12, 1952
Do	19804	42	39	25	65	June 11, 1952
Do	21903	73	73	47	65	Aug. 27, 1952
Do	23798	126	126	82	65	Feb. 12, 1953
Do	25474	106	102	66	65	June 16, 1953
Do	26020	494	494	321	65	Aug. 5, 1953
Kearney & Trecker Corp	4298	1,263	1,229	922	75	June 15, 1951
Do	8569	396	375	300	80	July 12, 1951
Kingsbury Machine Tool Co	84	636	636	509	80	Apr. 10, 1951
Kline Manufacturing Co	15225	294	200	150	75	Jan. 4, 1952
Knight, W. B., Machinery Co	12060	15	13	8	65	Nov. 9, 1951
Landis Tool Co	5154	2,528	2,528	1,896	75	July 27, 1951
LaPointe Machine Tool Co	1014	964	964	819	85	Feb. 26, 1951
Leblond, R. K., Machine Tool Co	15576	457	457	320	70	Dec. 21, 1951
Do	20775	96	96	62	65	July 16, 1952
Do	23424	86	86	56	64	Jan. 19, 1953
Do	24242	207	207	134	65	Mar. 26, 1953
Lees Bradner Co	15894	64	62	50	80	Jan. 14, 1952
Do	21608	16	16	11	70	Aug. 14, 1952
Lehmann Machine Co	19828	12	12	10	80	June 11, 1952
Do	23125	26	26	18	70	Jan. 8, 1953
Do	24715	8	8	6	70	June 10, 1953
Litton Industries	15828	202	202	141	70	Feb. 27, 1952
Lodge & Shipley Co	9211	174	174	139	80	Aug. 17, 1951
Do	9780	1,215	1,215	972	80	Do.
Lucas Machine division	14569	41	41	33	80	Dec. 7, 1951
Machine Rebuilding Co	15742	40	40	26	65	Nov. 9, 1951
Majestic Machine Tool Corp	19697	99	99	74	75	June 11, 1952
Mattison Machine Works	6637	256	256	192	75	Sept. 18, 1951
McLean Precision Products Co	3272	258	256	204	80	Sept. 15, 1951

TABLE 17.—*Tax amortization certificates granted expansion goal 123, machine tools*—Continued

Company	Tax amortization No.	Dollar amount in thousands			Percent	Date certified
		Applied for	Certified	Eligible		
Medart Co	1356	$530	$530	$424	80	Apr. 10, 1951
Michigan Tool Co	15801	125	102	71	70	Jan. 18, 1952
Do	19135	181	181	127	70	May 12, 1952
Do	24996	335	334	217	65	Oct. 4, 1955
Micromatic Hone Corp	2397	390	368	294	80	July 12, 1951
Miehle Printing Press Manufacturing Co	21564	37	37	24	65	Aug. 14, 1952
Miller Glass Engineering Co	15566	124	73	51	70	Apr. 4, 1952
Modern Collet & Machine Co	14103	125	125	81	65	Dec. 7, 1951
Modern Industrial Engineering Co	21911	50	50	35	70	Sept. 8, 1952
Do	20998	30	30	21	70	July 31, 1952
Modern Machine Tool Co	16461	113	91	63	70	Feb. 29, 1952
Monarch Machine Tool Co	18500	55	55	36	65	May 12, 1952
Do	1987	1,149	1,124	899	80	May 16, 1951
Do	10759	1,262	1,262	946	75	Sept. 21, 1951
Moore Special Tool Co	7330	39	26	21	80	Nov. 16, 1951
Do	7390	39	38	30	80	Sept. 21, 1951
Do	23340	74	74	52	70	Jan. 16, 1953
Do	24935	91	87	56	65	July 14, 1953
Morey Machinery Co., Inc	12907	880	880	616	70	Nov. 21, 1951
Morley Machinery Corp	20935	121	121	66	55	Dec. 18, 1952
Morris Machine Tool Co	22224	168	165	74	45	Sept. 26, 1952
Morton Manufacturing Co	16058	29	29	19	65	Jan. 11, 1952
Mosler Safe Co	9699	279	279	237	85	Sept. 19, 1951
Motch & Merryweather Machinery Co	6212	79	73	62	85	Aug. 16, 1951
Do	9417	313	313	250	80	Aug. 17, 1951
Do	9418	669	383	307	80	Sept. 18, 1951
Do	14532	724	724	471	65	Jan. 4, 1952
Do	24127	301	301	196	65	Mar. 26, 1953
Murray-Way Corp	7344	255	244	97	40	Sept. 21, 1952
National Acme Co	2952	310	310	264	85	July 27, 1951
Do	10730	230	230	172	75	Dec. 4, 1951
Do	16775	191	191	124	65	Feb. 26, 1952
Do	21018	116	114	74	65	July 29, 1952
Do	24798	381	365	237	65	June 16, 1953
Do	26629	206	206	134	65	Oct. 26, 1953
National Automatic Tool Co	17373	43	43	30	70	May 12, 1952
Do	5045	426	426	341	80	July 27, 1951
Do	21116	268	268	107	40	July 30, 1952
National Broach & Machine Co	10920	76	50	35	70	Dec. 7, 1951
Do	3706	604	590	472	80	July 2, 1951
Do	16805	151	130	91	70	Feb. 16, 1952
National Supply Co	10007	449	449	270	60	Dec. 13, 1951
The New Britain Machine Co	1673	737	737	626	85	Mar. 5, 1951
Do	16543	1,019	1,008	655	65	Feb. 6, 1952
Do	22436	98	98	39	40	Oct. 22, 1952
New Britain Machine Co., Lucas division	7547	25	25	20	80	Oct. 22, 1951
New Britain Machine Co	14877	263	263	171	65	Dec. 13, 1951
Do	17149	50	44	35	80	Mar. 18, 1952
Do	19508	430	430	301	70	May 12, 1952
Do	22648	16	16	11	69	Nov. 12, 1952
Newman Machine Co., Inc	16504	399	388	272	70	Feb. 26, 1952
Niagara Machine & Tool Works	6592	318	318	238	75	Feb. 21, 1952
Niles-Bement Pond Co	3260	1,938	1,850	1,388	75	Aug. 17, 1951
Do	15732	214	214	51	65	Feb. 16, 1952
Do	19281	231	198	129	65	June 12, 1952
Do	19638	53	51	33	65	Do.
Do	20561	1,343	1,311	524	40	July 29, 1952
Do	23368	436	356	231	65	Feb. 11, 1953
Do	23660	113	111	72	65	Do.
Do	25139	357	323	210	65	July 2, 1953
Nordberg Manufacturing Co	16952	476	476	309	65	Feb. 27, 1952
Norton Co	4254	171	171	154	90	May 16, 1951
Do	4255	5,771	5,771	4,328	75	Do.
Do	8118	242	226	170	75	Aug. 8, 1951
Do	8119	719	719	539	75	Do.
Ohio Machine Tool Co	14196	253	253	177	70	Jan. 2, 1952
Olofsson Tool & Die Co	18788	119	119	89	75	May 12, 1952
Do	8479	45	45	36	80	Nov. 16, 1951
Do	12059	44	44	35	80	Dec. 6, 1951
Do	12625	10	10	8	80	Nov. 16, 1951
Onsrud Machine Works, Inc	12403	19	17	14	80	Nov. 30, 1951
Do	18798	89	65	50	70	June 12, 1952
Do	20499	86	84	59	70	July 8, 1952
Do	540	27	27	24	90	Mar. 8, 1951

TABLE 17.—*Tax amortization certificates granted expansion goal 123, machine tools*—Continued

Company	Tax amortization No.	Dollar amount in thousands			Percent	Date certified
		Applied for	Certified	Eligible		
Oster Manufacturing Co	15578	$559	$559	$391	70	Feb. 29, 1952
The Packer Machine Co	10741	139	132	93	70	Dec. 4, 1951
Parker Majestic, Inc	20909	10	10	7	70	Aug. 14, 1952
Do	22089	5	5	3	70	Sept. 26, 1952
Pipe Machinery Co	25579	85	85	38	45	June 23, 1953
Plant 100 Corp	4297	5,232	5,232	3,924	75	Aug. 3, 1951
Planet Products Corp	583	72	72	50	70	Apr. 9, 1952
Do	22288	23	23	16	70	Nov. 10, 1952
Pollak Engineering & Manufacturing Corp	2261	71	71	64	90	May 16, 1951
Portage Machine Co	14530	126	121	97	80	Dec. 19, 1951
Do	20175	71	71	36	50	Aug. 7, 1952
Do	20187	41	35	25	70	July 7, 1952
Do	23145	11	11	8	70	Jan. 8, 1953
Porter McLeod Machine Co., Inc	15924	10	10	8	80	Jan. 5, 1952
Portland Machine Tool Rebuilders	13912	171	171	137	80	Dec. 12, 1951
Potter & Johnston Co	3261	847	782	587	75	Nov. 29, 1951
Do	10909	40	38	27	70	Nov. 6, 1951
Do	16633	67	62	41	65	Feb. 29, 1952
Do	22333	8	4	3	65	Oct. 22, 1952
Do	25022	42	42	27	65	June 11, 1953
Do	27033	139	125	81	65	Jan. 13, 1955
Precision Boring Co	12829	58	58	44	75	Nov. 30, 1951
Production Engineering Co	18031	85	85	60	70	May 22, 1953
Production Machine Co	13017	8	8	6	75	Jan. 2, 1952
Ramming, John, Machine Co	17983	48	48	31	65	May 12, 1952
Raybestos-Manhattan, Inc	142	401	401	361	90	Jan. 5, 1951
Reed Prentice Corp	1759	1,258	1,258	1,006	80	Apr. 12, 1951
Reed Rolled Thread Die Co	8810	357	117	82	70	Nov. 16, 1951
Do	17605	111	111	83	75	May 12, 1952
Rehnberg-Jacobson Manufacturing Co., Inc	13923	172	168	118	70	Jan. 10, 1952
Reid Bros. Co., Inc	6776	10	10	7	70	Sept. 18, 1952
Do	14163	105	77	52	68	Apr. 21, 1952
Do	24712	63	63	44	70	June 8, 1953
Reliable Machine Rebuilders, Inc	18224	99	90	67	75	May 12, 1952
Do	19158	10	10	8	75	Do.
Rice Barton Corp	18169	120	120	78	65	Do.
Riverside Machinery Co	14356	484	329	230	70	Dec. 7, 1951
Rockford Machine Tool Co	7021	134	134	101	75	Nov. 16, 1951
Do	24231	500	500	300	60	Mar. 12, 1953
Do	24232	260	260	156	60	Mar. 13, 1953
Rockwell Manufacturing Co	2236	1,345	1,315	1,052	80	July 20, 1951
Ryman Engineering Co	10306	118	115	81	70	Nov. 23, 1951
Saginaw Machine Tool Co	23063	68	68	48	70	Jan. 7, 1953
Schauer Manufacturing Corp	14000	191	185	120	65	Jan. 14, 1952
Sheffield Corp	3493	287	271	203	75	Aug. 3, 1951
Do	18530	34	27	17	65	June 18, 1952
Shepherd Special Machine & Die Co	12450	10	10	8	75	Nov. 30, 1951
Sibley Machine & Foundry Corp	3838	74	74	52	70	Dec. 7, 1951
Do	24833	28	28	19	70	June 18, 1953
Do	27195	45	45	32	70	Jan. 26, 1954
Sidney Machine Tool Co	18133	34	34	27	80	May 12, 1952
Do	20327	17	17	12	70	July 10, 1952
Do	22757	20	20	14	70	Dec. 8, 1952
Smith Harris Machine Co	24909	52	50	30	60	Aug. 4, 1953
Smith Water Building Corp	21238	1,095	1,045	784	75	June 30, 1952
South Water Machine Co	4469	2,350	2,350	1,763	75	Do.
S. & S. Corrugated Paper Machine Co	3277	57	57	51	90	July 2, 1951
Stacy Machine Works, Inc	7556	250	235	188	80	July 11, 1951
Do	19419	66	66	46	70	June 3, 1952
Standard Electrical Tool Co	15918	39	39	31	80	Jan. 14, 1952
Strene Tool Manufacturing Co	2542	245	245	196	80	June 29, 1951
Struthers Wells Corp	151	18	18	15	85	Jan. 4, 1951
Suhr Machine Tool Co	11983	135	135	88	65	Nov. 30, 1951
Sundstrand Machine Tool Co	24990	218	218	142	65	June 12, 1953
Do	2725	47	47	35	75	Oct. 14, 1957
Superior Machine & Engineering Co	1618	76	57	46	80	Apr. 11, 1951
Do	12057	105	40	28	70	Nov. 16, 1951
Do	22453	94	94	57	61	Dec. 23, 1952
The Taft-Pierce Manufacturing Co	15803	65	63	47	75	Jan. 2, 1952
Do	16746	82	82	54	66	Mar. 7, 1952
Do	19827	74	74	48	65	June 10, 1952
Do	22143	101	99	64	65	Sept. 23, 1952
Do	26881	142	142	92	65	Nov. 12, 1953

TABLE 17—*Tax amortization certificates granted expansion goal 123, machine tools*—Continued

Company	Tax amortization No.	Dollar amount in thousands			Percent	Date certified
		Applied for	Certified	Eligible		
Hamilton Thomas Corp.	12479	$27	$27	$22	80	Dec. 4, 1951
Transicoil Corp.	764	13	13	12	90	May 8, 1951
Turchan Follower Machine Co.	14462	37	37	30	80	Feb. 15, 1952
Do.	23332	481	452	226	50	Jan. 16, 1953
Valley Welding Boiler Co.	17271	88	88	57	65	May 12, 1952
Do.	19107	20	20	13	65	Do.
Van Norman Co.	14896	322	280	210	75	Dec. 14, 1951
Do.	19321	57	56	45	80	May 12, 1952
Warner & Swasey Co., The	5693	202	202	172	85	Aug. 27, 1951
Do.	5694	778	702	562	80	Aug. 17, 1951
Do.	16227	1,505	1,500	1,125	75	Nov. 21, 1951
Do.	17010	178	175	114	65	Feb. 27, 1952
Do.	21378	171	171	111	65	Aug. 27, 1952
Do.	21379	250	250	162	65	Aug. 28, 1952
Watson-Stillman Co.	26839	157	157	102	65	Nov. 3, 1953
Wean Equipment Corp.	1829	366	366	293	80	June 15, 1951
Wean Manufacturing Co.	1828	173	173	130	75	June 29, 1951
Werner Machine Co., Inc.	3823	16	16	14	90	May 25, 1951
Whitin Machine Works	16241	211	170	119	70	Feb. 8, 1952
Whitney, Baxter D., & Son, Inc.	15932	41	41	26	65	Jan. 23, 1952
Whitnon Manufacturing Co.	16265	26	22	18	80	Feb. 8, 1952
Wickes Bros.	21115	71	71	46	65	Sept. 21, 1952
Do.	22546	6	6	3	50	Nov. 14, 1952
Wickes Corp.	21114	187	173	112	65	Sept. 10, 1952
Do.	24666	28	28	18	65	Apr. 29, 1953
Willcox Gibbs Sewing Machine Co.	17515	150	150	120	80	Feb. 26, 1952
Do.	19669	13	13	10	80	June 11, 1952
Winans Engineering & Manufacturing Corp.	15202	28	28	18	65	Jan. 28, 1952

Source: Office of Defense Mobilization.

TABLE 18.—*Tax amortization applications denied, expansion goal 123, machine tools*

Company	Tax amortization No.	Amount applied for (thousands of dollars)	Date denied
Abrasive Machine Tool Co	19795	$20	May 23, 1952
Arter Grinding Machine Co	15862	3	Jan. 21, 1952
Do	18777	1	Apr. 29, 1952
Barnes Drill Co	24189	150	Mar. 16, 1953
Baush Machine Tool Co	30238	101	Aug. 3, 1956
Boyar-Schultz Corp	17419	585	Feb. 25, 1952
Do	27129	675	Dec. 18, 1953
Bullard Co	26753	929	Oct. 23, 1953
Clark-Aiken Co., The	6480	2,077	Dec. 14, 1951
Cleveland Tapping Machine Co	15208	135	Feb. 12, 1952
Continental Gin Co	28242	48	Aug. 10, 1954
Cross Co	26446	1,109	Dec. 18, 1953
Do	29828	4,000	May 31, 1956
DeLuxe Engineering Co	12608	5	Nov. 15, 1951
Diamond Machine Tool Co	18029	493	Apr. 21, 1952
Doall Co	25345	30	June 24, 1953
Enterprise Co., The	7224	30	Dec. 14, 1951
Ex-Cell-O Corp	28055	258	June 18, 1954
Fitchburg Engineering Corp	19845	25	Nov. 12, 1952
Foote-Burt Co., The	15312	73	Jan. 8, 1952
Gallmeyer & Livingston Co	26175	160	Aug. 3, 1953
Gould & Eberhardt, Inc	3512	195	Sept. 6, 1951
Greenlee Bros. & Co	8760	145	July 2, 1952
Hall Planetary Co	14178	9	Jan. 8, 1952
Hamilton Tool Co	15865	61	Jan. 5, 1952
Hammond Machinery Builders	6892	64	Aug. 17, 1951
Do	6893	92	Do.
Herzberg Corp	4121	24	Nov. 9, 1951
Himoff Machine Co., Inc	16021	302	Feb. 4, 1952
Lees, Bradner Co	26070	119	Aug. 18, 1953
Lehman Machine Co	21979	63	Sept. 12, 1952
Mack Haines	28317	13	Aug. 10, 1954
Maquoketa Co	22268	240	Oct. 8, 1952
Miehle Printing Press & Manufacturing Co	27175	444	Jan. 7, 1954
Modern Industrial Engineering Co	13189	19	Jan. 5, 1952
Moore, Richard F	7332	199	Feb. 18, 1952
Morris Machine Tool Co	1844	10	Apr. 2., 1951
New Britain Machine Co	26131	37	Nov. 12, 1953
Do	26908	49	Nov. 27, 1953
Do	26987	.3	Do.
Novo Engine Co	26494	7	Oct. 23, 1953
O'Neil Irwin Manufacturing Co	27542	164	Mar. 9, 1954
Pacific Industrial Manufacturing Co	19035	145	May 2, 1952
Peerless Machine Co	18501	600	Apr. 21, 1952
Plan-O-Mill Corp	24631	4	June 12, 1953
Portage Machine Co	19311	115	June 17, 1952
Sidney Machine Tool Co	22790	15	Nov. 26, 1952
Sommerfield Machine Co	9900	26	Jan. 22, 1952
Sundstrand Machine Tool Co	28067	520	Aug. 3, 1956
Townsend, H. P., Manufacturing Co	15728	150	Feb. 26, 1952
Wickes Bros	21107	4	July 24, 1952
Do	26502	1	Sept. 29, 1953
Wickes Corp	17642	82	May 2, 1952

Source: Office of Defense Mobilization.

TABLE 19.—*Tax amortization certificates granted, expansion goal 124, presses and forging equipment*

[Dollar amount in thousands]

Company	Tax amortization No.	Applied for	Certified	Eligible	Percent	Date certified
Ajax Manufacturing Co	12224	$329	$329	$231	70	Dec. 5, 1951
Do	16744	94	94	66	70	Mar. 13, 1952
Baldwin-Lima-Hamilton Corp	24991	1,788	1,788	894	50	May 22, 1953
E. W. Bliss Co	6112	689	670	436	65	Nov. 30, 1951
Do	6113	80	57	37	65	Sept. 21, 1951
Do	6115	184	184	92	50	Sept. 26, 1952
Do	15448	36	36	24	67	Jan. 21, 1952
Do	20655	79	76	49	65	July 31, 1952
Do	20709	38	38	24	65	July 20, 1952
Do	21651	410	410	205	50	Aug. 14, 1952
Do	20654	176	172	112	65	July 31, 1952
Chisholm Boyd & White Co	4521	31	31	28	90	July 27, 1951
Do	25805	51	51	36	70	July 10, 1953
Do	2055	28	28	25	90	Mar. 7, 1951
Clearing Machine Corp	6852	136	136	88	65	Nov. 30, 1951
Do	10469	1,020	837	544	65	Feb. 20, 1952
Cleveland Crane & Engineering	10677	730	730	511	70	Feb. 29, 1952
Cleveland Punch Shear Works Co	22940	163	163	114	70	Feb. 13, 1953
Cyril Bath Co	8633	34	34	27	80	Dec. 6, 1951
Do	14873	913	884	530	60	Apr. 30, 1952
Do	19317	4	2	2	70	June 9, 1952
Do	21060	9	9	6	70	July 29, 1952
Do	24673	25	25	18	70	Apr. 29, 1953
Do	11969	17	17	14	80	Dec. 6, 1951
Do	11970	22	22	17	80	Do.
Denison Engineering Co	5123	39	38	27	70	Nov. 16, 1951
Do	17103	100	100	70	70	May 19, 1952
Do	12301	303	277	194	70	Dec. 6, 1951
Detroit Drop Die Co	12252	18	18	15	83	Dec. 4, 1951
Dreis & Krump Manufacturing Co	12548	699	699	490	70	Dec. 6, 1951
Emhart Manufacturing Co	5662	152	152	83	55	Feb. 1, 1952
Erie Foundry Co	7668	245	169	144	85	Sept. 21, 1951
Famco Machine Co	2039	327	327	229	70	Nov. 23, 1951
Farrell Birmingham Co., Inc	22963	275	275	179	65	Dec. 5, 1952
Ferracute Machine Co	512	208	208	176	85	Mar. 7, 1951
Hallden Machine Co	2709	475	475	285	60	June 1, 1951
Hufford Machine Works, Inc	17041	15	15	10	65	Mar. 24, 1952
James R. Kearney Corp	12607	200	200	130	65	May 5, 1952
Koehring Co	3128	955	955	717	75	Aug. 2, 1951
Do	7143	32	32	22	70	Dec. 21, 1951
Do	11022	35	35	23	65	Dec. 7, 1951
Do	15835	417	417	271	65	Feb. 14, 1952
Do	21442	35	35	14	40	July 31, 1952
Lake Erie Engineering Corp	453	272	272	218	80	Mar. 29, 1951
Do	4573	29	29	22	75	June 29, 1951
Do	7426	51	51	33	65	Dec. 7, 1951
Do	12045	18	18	11	65	Do.
Do	18734	17	17	13	75	June 3, 1952
Do	24610	18	18	12	70	June 5, 1953
Lewis Machine Co	6206	29	13	12	90	Sept. 8, 1951
Loma Machine Manufacturing Co., Inc	13492	168	271	190	70	Apr. 24, 1952
Miehle Printing Press Manufacturing Co	15526	139	139	104	75	Jan. 5, 1952
Minster Machine Co	2460	198	198	138	70	Sept. 21, 1951
Do	20997	333	327	147	45	July 10, 1952
National Machinery Co	6284	328	328	289	88	July 6, 1951
Do	13261	135	135	88	65	Jan. 25, 1952
Do	16284	2,807	2,807	1,825	65	Mar. 17, 1952
Do	22860	194	140	91	65	Jan. 7, 1953
Do	25645	146	146	73	50	June 23, 1953
The National Machinery Co., Inc	24191	941	941	470	50	June 1, 1953
New England Butt Co	17020	222	222	111	50	June 5, 1952
Niagara Machine & Tool Works	11873	37	33	24	75	Feb. 28, 1952
Do	14117	135	135	101	75	Feb. 11, 1952
Do	17507	296	296	192	65	July 23, 1952
Do	23321	855	855	428	50	Mar. 30, 1953
The Oilgear Co	8515	1,100	1,100	880	80	June 7, 1951
O'Neil-Irwin Manufacturing Co	9542	198	198	138	70	Apr. 3, 1952
Peck Stow Wilcox Co	11942	20	20	16	80	Nov. 30, 1951
Peck, Stow & Wilcox Co	21689	127	127	83	65	Nov. 25, 1952
Pines Engineering Co., Inc	12322	46	46	35	75	Nov. 30, 1951
Rodgers Hydraulic, Inc	14230	50	50	35	70	Mar. 26, 1953
Do	17488	57	57	40	70	Mar. 26, 1952
Do	24739	79	79	56	70	Apr. 16, 1953
Do	25023	62	62	43	70	May 1, 1953
Rotex Punch Co	22444	55	41	18	45	Nov. 26, 1952
Wales-Strippit Corp	6641	28	20	11	55	Jan. 5, 1952
Wapakoneta Machine Co	516	333	315	252	80	May 21, 1951
Wiedemann Machine Co	21490	31	31	22	70	Aug. 25, 1952

Source: Office of Defense Mobilization.

TABLE 20.—*Tax amortization applications denied, expansion goal 124, presses and forging equipment*

Company	Tax amortization No.	Amount applied for (thousands of dollars)	Date denied
American Gage & Machine Co	5364	$27	Sept. 18, 1951
Do	9791	4	Dec. 5, 1951
Do	11397	68	Nov. 8, 1951
Bliss, E. W. Co	15446	11	Jan. 22, 1952
Do	26302	77	Aug. 24, 1953
Do	26303	270	Do.
Do	26304	99	Do.
Cyril Bath Co	27617	42	Mar. 24, 1954
Greenerd Arbor Press Co	17222	22	Mar. 20, 1952
Hydraulic Press Manufacturing Co	22345	97	Sept. 30, 1952
Minster Machine Co	17008	24	Mar. 7, 1952
Royle, John & Sons	704	94	Aug. 14, 1951
Sutton Engineering Co	28247	162	Aug. 10, 1954
Wales Strippit Corp	8518	135	Jan. 29, 1952
Do	12153	28	Jan. 30, 1952
Do	15560	5	Jan. 23, 1952
Do	16672	50	Mar. 7, 1952

Source: Office of Defense Mobilization.

TABLE 21.—*Tax amortization certificates granted expansion goal 199, elephant tools*

Company	Tax amortization No.	Dollar amount in thousands			Percent	Date certified
		Applied for	Certified	Eligible		
Farrel-Birmingham Co., Inc	25826	$1,966	$1,966	$1,671	85	Aug. 4, 1953
Gray, G. A. Co	28296	250	250	112	45	Sept. 9, 1954
Do	22971	390	390	390	100	Jan. 7, 1953
Onsrud Machine Works	22518	1,411	1,375	1,375	100	Do.

Source: Office of Defense Mobilization.

TABLE 22.—*M-day machine tool pool contracts*

Contractor	Number of items	Value
The Thompson Grinder Co., Springfield, Ohio	167	$2,186,712
Abrasive Machine Tool Co., East Providence, R. I	150	584,750
Brown & Sharpe Manufacturing Co., Providence, R. I	935	8,948,835
The Avey Drilling Machine Co., Covington, Ky	140	508,548
Axelson Manufacturing Co. division United States Industries, Vernon Station, Los Angeles, Calif	85	1,256,284
The Blanchard Machine Co., Cambridge, Mass	130	2,231,450
Cincinnati Lathe & Tool Co., Cincinnati, Ohio	460	1,214,440
Cincinnati Shaper Co., Cincinnati, Ohio	319	7,767,122
The La Pointe Machine Tool Co., Hudson, Mass	67	3,299,605
The Springfield Machine Tool Co., Springfield, Ohio	48	757,847
Besly-Welles Corp., South Beloit, Ill	22	709,245
Gallmeyer & Livingston Co., Grand Rapids, Mich	125	1,102,370
The Fellows Gear Shaper Co., Springfield, Vt	162	3,273,881
Arter Grinding Machine Co., Worcester, Mass	49	709,443
The Morris Machine Tool Co., Cincinnati, Ohio	55	636,425
Bardons & Oliver, Inc., Cleveland, Ohio	50	646,875
Bryant Chucking Grinder Co., Springfield, Vt	150	3,153,134
The R. K. LeBlond Machine Tool Co., Cincinnati, Ohio	446	5,042,936
Gisholt Machine Co., Madison, Wis	199	5,836,250
Kearney & Trecker Corp., Milwaukee, Wis	600	12,043,325
Hardinge Bros., Inc., Elmira, N. Y	304	1,036,346
National Acme Co., Cleveland, Ohio	248	7,752,910
Sheldon Machine Co., Inc., Chicago, Ill	525	1,209,675

TABLE 22.—*M-day machine tool pool contracts*—Continued

Contractor	Number of items	Value
National Broach & Machine Co., Detroit, Mich	70	$1, 690, 500. 00
Rockford Machine Tool Co., Rockford, Ill	116	3, 541, 434. 00
Reid Bros. Co., Inc., Beverly, Mass	200	845, 000. 00
The Lodge & Shipley Co., Cincinnati, Ohio	245	3, 294, 980. 00
The Wickes Corp., Wickes machine division, Saginaw, Mich	3	358, 764. 00
Pratt & Whitney Co., West Hartford, Conn	433	12, 931, 739. 00
Fosdick Machine Tool Co., Cincinnati, Ohio	209	2, 922, 424. 00
Van Norman Machine Co., Springfield, Mass	244	2, 728, 390. 00
Kent-Owens Machine Co., Toledo, Ohio	60	403, 100. 00
Rivett Lathe & Grinder, Inc., Boston, Mass	60	452, 625. 00
George Gorton Machine Co., Racine, Wis	222	2, 234, 900. 00
Landis Tool Co., Waynesboro, Pa	275	6, 518, 851. 00
Edlund Machinery Co., Cortland, N. Y	84	329, 776. 00
The Do All Co., Des Plaines, Ill	134	822, 695. 00
Leland-Gifford Co., Worcester, Mass	630	763, 750. 00
Gould & Eberhardt Co., Irvington, N. J	85	1, 218, 540. 00
The Cleveland Automatic Machine Co., Cincinnati, Ohio	30	818, 255. 00
Baker Bros., Inc., Toledo, Ohio	79	655, 168. 00
The Bullard Co., Bridgeport, Conn	111	9, 282, 514. 00
New Britain Machine Co., New Britain, Conn	114	3, 864, 250. 00
Lucas machine division of New Britain Machine Co., Cleveland, Ohio	40	1, 744, 350. 00
Carleton Machine Tool Co., Cincinnati, Ohio	120	2, 723, 868. 00
The Heald Machine Co., Worcester, Mass	209	3, 979, 885. 00
The Monarch Machine Tool Co., Sidney, Ohio	390	8, 030, 475. 00
Cincinnati Milling & Grinding Machines, Inc., Cincinnati, Ohio	1, 466	23, 994, 080. 00
American Broach & Machine, division of Sundstrand Machine Tool Co., Ann Arbor, Mich	57	1, 145, 266. 00
Cleerman Machine Tool Corp., Green Bay, Wis	50	545, 945. 00
Elgin Tool Works, Inc., Chicago, Ill	50	116, 400. 00
Jones & Lamson Machine Co., Springfield, Vt	187	4, 876, 146. 10
Norton Co., Worcester, Mass	337	6, 477, 409. 00
Barnes Drill Co., Rockford, Ill	64	1, 132, 716. 00
South Bend Lathe Works, South Bend, Ind	1, 475	2, 089, 687. 50
Reed-Prentice Corp., East Longmeadow, Mass	65	2, 370, 645. 00
Colonial Broach & Machine Co., Detroit, Mich	50	2, 011, 880. 00
The Cincinnati Gilbert Machine Tool Co., Cincinnati, Ohio	62	1, 084, 075. 00
The Wade Tool Co., Waltham, Mass	10	44, 850. 00
Michigan Tool Co., Detroit, Mich	48	1, 106, 620. 00
The Boye & Emmes Machine Tool Co., Cincinnati, Ohio	20	291, 968. 48
The Kempsmith Machine Co., Milwaukee, Wis	30	401, 250. 00
W. B. Knight Machinery Co., St. Louis, Mo	12	188, 400. 00
Detroit Broach & Machine Co., Rochester, Mich	13	512, 271. 00
The Sidney Machine Tool Co., Sidney, Ohio	20	534, 780. 00
Sheffield Corp., Dayton, Ohio	10	441, 645. 00
Atlantic Instrument Corp., Norwood, Mass	10	64, 096. 50
Dreis & Krump Manufacturing Co., Chicago, Ill	50	588, 775. 00
Wysong & Miles Co., Greensboro, N. C	34	204, 730. 00
Cone Automatic Machine Co., Inc., Windsor, Vt	46	1, 635, 195. 00
Hanson & Whitney Co., Hartford, Conn	15	319, 705. 00
The Lees-Bradner Co., Cleveland, Ohio	20	458, 520. 63
The Cleveland Planer, Cleveland, Ohio	7	337, 583. 00
The Taft-Pierce Manufacturing Co., Woonsocket, R. I	45	191, 925. 00
Niagara Machine & Tool Works, Buffalo, N. Y	35	597, 002. 00
DeVlieg Machine Co., Detroit, Mich	28	1, 199, 450. 00
Peerless Machine Co., Racine, Wis	105	335, 016. 20
National Automatic Tool Co., Inc., Richmond, Ind	25	405, 162. 00
Racine Hydraulics & Machinery, Inc., Racine, Wis	70	286, 790. 00
Oliver Instrument Co., Adrian, Mich	66	190, 260. 00
Total	14, 201	200, 244, 892. 00

Source: General Services Administration.

TABLE 23.—*List of companies requested to reply to Department of Justice survey*[1]

The Cincinnati Milling Machine Co., Cincinnati, Ohio.
*The Bullard Co., Bridgeport, Conn.
Giddings & Lewis Machine Tool Co., Fond du Lac, Wis.
Kearney & Trecker Corp., Milwaukee, Wis.
*The Warner & Swasey Co., Cleveland, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
W. F. and John Barnes Co., Rockford, Ill.
The R. K. LeBlond Machine Co., Cincinnati, Ohio
*The National Acme Co., Cleveland, Ohio
Gleason Works, Rochester, N. Y.
*Brown & Sharpe Manufacturing Co., Providence, R. I.
Ex-Cell-O Corp., Detroit, Mich.
*Gisholt Machine Co., Madison, Wis.
*Landis Tool Co., Waynesboro, Pa.
*Pratt & Whitney Co., Inc., West Hartford, Conn.
*The Foote-Burt Co., Cleveland, Ohio
*The Monarch Machine Tool Co., Sidney, Ohio
*The Cross Co., Detroit, Mich.
*Jones & Lamson Machine Co., Springfield, Vt.
*Norton Co., Worcester, Mass.
*Snyder Tool & Engineering Co., Detroit, Mich.
The New Britain Machine Co., New Britain, Conn.
*National Automatic Tool Co., Inc., Richmond, Ind.
*The American Tool Works Co., Cincinnati, Ohio
The Doall Co., Des Plaines, Ill.
Greenlee Bros. & Co., Rockford, Ill.
*Micromatic Hone Corp., Detroit, Mich.
*Van Norman Machine Co., Springfield, Mass.
The Ingersoll Milling Machine Co., Rockford, Ill.
Baldwin-Lima Hamilton Corp., Hamilton, Ohio
*Buhr Machine Tool Co., Ann Arbor, Mich.
*The G. A. Gray Co., Cincinnati, Ohio
*De Vlieg Machine Co., Ferndale, Detroit, Mich.
*Farrel-Birmingham Co., Inc., Ansonia, Conn.
*The Lodge & Shipley Co., Cincinnati, Ohio
*Hardinge Bros., Inc., Elmira, N. Y.
*Rockford Machine Tool Co., Rockford, Ill.
*South Bend Lathe Works, South Bend, Ind.
*The Fellows Gear Shaper Co., Springfield, Vt.
*The Thompson Grinder Co., Springfield, Ohio
*Cone Automatic Machine Co., Inc., Windsor, Vt.
*American Steel Foundries, Cincinnati, Ohio
*Danly Machine Specialties, Inc., Chicago, Ill.
U. S. Industries, Inc., New York, N. Y.
*E. W. Bliss Co., Canton, Ohio
Verson Allsteel Press Co., Chicago, Ill.
*Waterbury Farrell Foundry & Machine Co., Waterbury, Conn.
*Niagara Machine & Tool Works, Buffalo, N. Y.
*The Minster Machine Co., Minster, Ohio
Dreis & Krump Manufacturing Co., Chicago, Ill.
*The Hydraulic Press Manufacturing Co. (division of Koehring Co.), Mount Gilead, Ohio
*Wiesner-Rapp Co., Inc., Buffalo, N. Y.
*The Federal Machine & Welder Co., Warren, Ohio
*The Ajax Manufacturing Co., Cleveland, Ohio
*Stamco, Inc., New Bremen, Ohio
*The Cyril Bath Co., Solon, Ohio
*Cleveland Crane & Engineering Co., Wickliffe, Ohio
Wysong & Miles Co., Greensboro, N. C.
Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.
Bertsch & Co., Cambridge City, Ind.
National Machinery Co., Tiffin, Ohio.

[1] Companies furnishing replies are denoted by an *.

TABLE 24.—*Analysis of selected classes or cutting-type machine tool shipments, by groups of companies, 1952, 1955, 1957*

Year	Number of companies	Value of shipments	Percentages of shipments		
			4 largest companies [1]	8 largest companies [1]	12 largest companies [1]
S. C. C. 3411, boring machines:		*Thousands*			
1952 (3 months)	35	$33,718	60.7	69.6	
1955	35	86,179	51.5	69.6	
1957 (9 months)	35	83,953	59.1	[2] 74.4	
S. C. C. 3413, drilling machines:					
1952 (3 months)	51	27,337	25.9	41.0	45.4
1955	49	89,633	22.2	30.5	33.5
1957 (9 months)	47	40,662	44.1	67.5	[3] 73.4
S. C. C. 3415, grinding machines:					
1952 (3 months)	60	36,949	50.6	67.6	70.1
1955	58	98,043	32.7	68.6	71.2
1957 (9 months)	54	97,738	54.0	69.0	[4] 71.9
S. C. C. 3416, lathes:					
1952 (3 months)	62	62,091	36.9	53.0	69.0
1955	57	155,922	35.3	52.5	69.9
1957 (9 months)	57	156,691	37.3	57.7	70.4
S. C. C. 3417, milling machines:					
1952 (3 months)	52	27,055	63.3	68.4	
1955	49	95,821	62.6	66.9	
1957 (9 months)	49	107,521	62.7	[5] 71.6	

[1] Based on rank in 9 months: 1957.
[2] 6 companies.
[3] 10 companies.
[4] 9 companies.
[5] 7 companies.

Source: BDSA, U. S. Department of Commerce.

TABLE 25.—*Analysis of selected classes of forming and shaping type machine tool shipments, by groups of companies, 1952, 1955, 1957*

Year	Number of companies	Value of shipments	Percentage of shipments	
			4 largest companies [1]	8 largest companies [1]
S. C. C. 3441, bending and forming machines:		*Thousands*		
1952 (3 months)	40	$5,335	58.5	64.0
1955	40	23,518	50.7	55.5
1957 (9 months)	35	25,047	61.8	[2] 72.6
S. C. C. 3442, presses, hydraulic and pneumatic:				
1952 (3 months)	40	13,361	43.5	67.3
1955	40	33,116	28.0	43.0
1957 (9 months)	35	26,473	52.1	73.3
S. C. C. 3443, presses, mechanical-power driven:				
1952 (3 months)	41	21,172	57.5	
1955	42	108,853	62.5	
1957 (9 months)	41	116,528	73.6	
S. C. C. 3445, punching and shearing machines:				
1952 (3 months)	30	4,321	51.6	65.2
1955	31	18,333	48.1	62.5
1957 (9 months)	28	19,782	56.6	[2] 71.2

[1] Based on rank in 9 months, 1957.
[2] 6 companies.

Source: BDSA, U. S. Department of Commerce.

TABLE 26.—*Survey of the machine-tool industry shipments of cutting-type tools: S. C. C. 3416, lathes 1949, 1952, 1955, 1957*

[Thousands omitted]

Year	Value of shipments		Shipments, total survey	Shipments		
	BDSA	Census		4 largest companies [1]	8 largest companies [1]	12 largest companies [1]
1949		$62,289	$54,818	$30,975	$43,576	$51,996
1952		281,587	224,540	127,462	183,893	220,154
1955	$155,922		131,161	73,560	99,566	126,678
1957 (9 months)	156,691		129,996	76,483	107,332	126,115
			Percent			
1949		100	88.0	49.7	69.9	83.4
1952		100	79.7	45.2	65.3	78.2
1955	100		84.1	47.2	63.8	81.2
1957 (9 months)	100		83.0	48.8	68.5	80.5

[1] Based on rank in 9 months, 1957.

Source: U. S. Department of Justice and U. S. Department of Commerce.

TABLE 27.—*Inventory of Government-owned machine tools*

[Estimated average value per unit, $10,000]

Armed services (Army, Navy, Air Force):		
In private facilities:		
On cash rental (estimated annual collection, $22,050,000)	$17, 887	
On compensatory offset	125, 664	
Total in private facilities	143, 551	
In Government facilities	64, 552	
Total in facilities	208, 103	
Assigned to packages	23, 278	
Assigned to standby lines	19, 533	
Stored unassigned	42, 181	
Total in storage	84, 992	
Total Armed services		293, 095
Civilian agencies (AEC, GSA, HEW, Maritime):		
In private facilities:		
On cash rental (estimated annual collection, $2,024,000)	$1, 572	
On compensatory offset	830	
Total in private facilities	2, 402	
In Government facilities	23, 169	
Total in facilities	25, 571	
Assigned to packages	0	
Assigned to standby lines	1, 769	
Stored unassigned	2, 823	
Total in storage	4, 592	
Total civilian agencies		30, 163
Total Government-owned machine tools		323, 258

Source: Adapted from tabulation prepared by Office of Defense Mobilization, reproduced in Joint Committee on Defense Production, Seventh Annual Report, S. Rept. No. 1172, 85th Cong., 2d sess., p. 147 (1958)

○